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THE ECONOMIC DEVELOPMENT AND URBANIZATION  
OF THE NAVAJO INDIAN RESERVATION

A THESIS

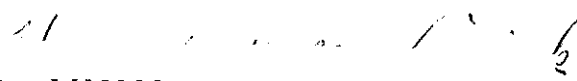
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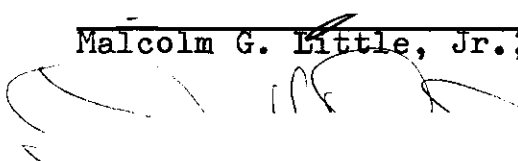
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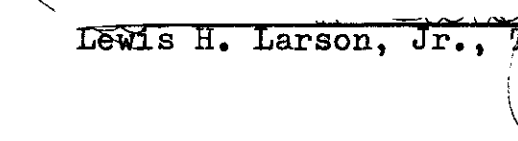
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OF THE NAVAJO INDIAN RESERVATION

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## ABSTRACT

The Navajo Indian Reservation, which contains about 14½ million acres, is the nation's largest. The Navajo Tribe, which numbers about 90,000 persons, is also the nation's largest. The Navajo Reservation is well endowed with certain types of natural resources (such as minerals and scenery), but is rather deficient in others (such as water and vegetation). Because of the underdeveloped nature of the reservation, the Navajos do not enjoy a standard of living comparable to that of their non-Indian neighbors.

It is the central purpose of this thesis to show how a primitive economy, based on extensive land use, can be diversified so as to provide new jobs within a given area for a majority of those who desire to live there. Means of using more effectively the reservation's natural and human resources will be explored. It is anticipated that such development will enable the Navajos to move into the orbit of American society more fully. It is hoped that some of the methods and findings of this thesis will be applicable to the problems of other Indian reservations--as well as to underdeveloped foreign nations.

The methodology used in preparing this thesis involved four main steps. First, a survey of the available literature was made. Second, correspondence with knowledge-

able persons was undertaken. Third, a visit was made to the reservation. The fourth step entailed an analysis of the different economic activities which are important to the Navajos. This analysis led to the treatment of Navajo problems under three headings: (1) Extractive and Primary Processing Activities; (2) Manufacturing, Trade, and Tourism; and (3) Public Services and Facilities.

Chapter II deals with extractive and primary processing activities, i.e., grazing, farming, forestry, and mining. These activities employ the majority of Navajos today. There is room for growth in all of them except grazing. Farming has a particularly bright future; its development will require much planning.

Manufacturing, trade, and tourism (the subject matter of Chapter III) are in their infancy on the reservation. However, the reservation has assets which ought to interest manufacturers. Trade and tourism will grow concurrently with completion of an adequate reservation road system. Recommendations about how and where to develop trade and tourist facilities are made.

The various public services and facilities which are needed to support a growing, diversified economy are discussed in Chapter IV. Community planning and development, as well as housing, are given special attention because of peculiarities in the Navajo land use and housing situation.

Those reforms of the governmental structure which are needed to aid the development process are set forth in Chapter V. Complete termination of Federal services is not advocated. The conclusion of the thesis is that the Tribe is the most logical form of government for the reservation for the foreseeable future.

## CHAPTER I

### THE NAVAJO INDIAN RESERVATION

The Navajo Indian Reservation contains about 14,450,000 acres. It occupies the northeastern corner of Arizona, the southeastern corner of Utah, and the northwestern corner of New Mexico. (See Figure 1.) Another 1,020,000 acres which lie outside the reservation boundaries are under Navajo jurisdiction and about 830,000 additional acres are administered by the Bureau of Land Management for the benefit of the Navajos. (1) Most of this Navajo-controlled or -used off-reservation land lies in northwestern New Mexico where it is interspersed with various Federal, State, and private holdings. Hence, it is called the "Checkerboard Area." (See Figure 1.)

The total area of Navajo use and occupancy is approximately 16,300,000 acres. The term applied to the entire area which is used principally by Navajos is "the Navajo Country." This thesis will, of course, be focused on the reservation proper; but, it will also be concerned with the balance of "the Navajo Country" inasmuch as the entire area constitutes the Navajo land base and because it is essentially administered as a unit.

In 1960, there were between 88,000 and 90,000 Navajos.

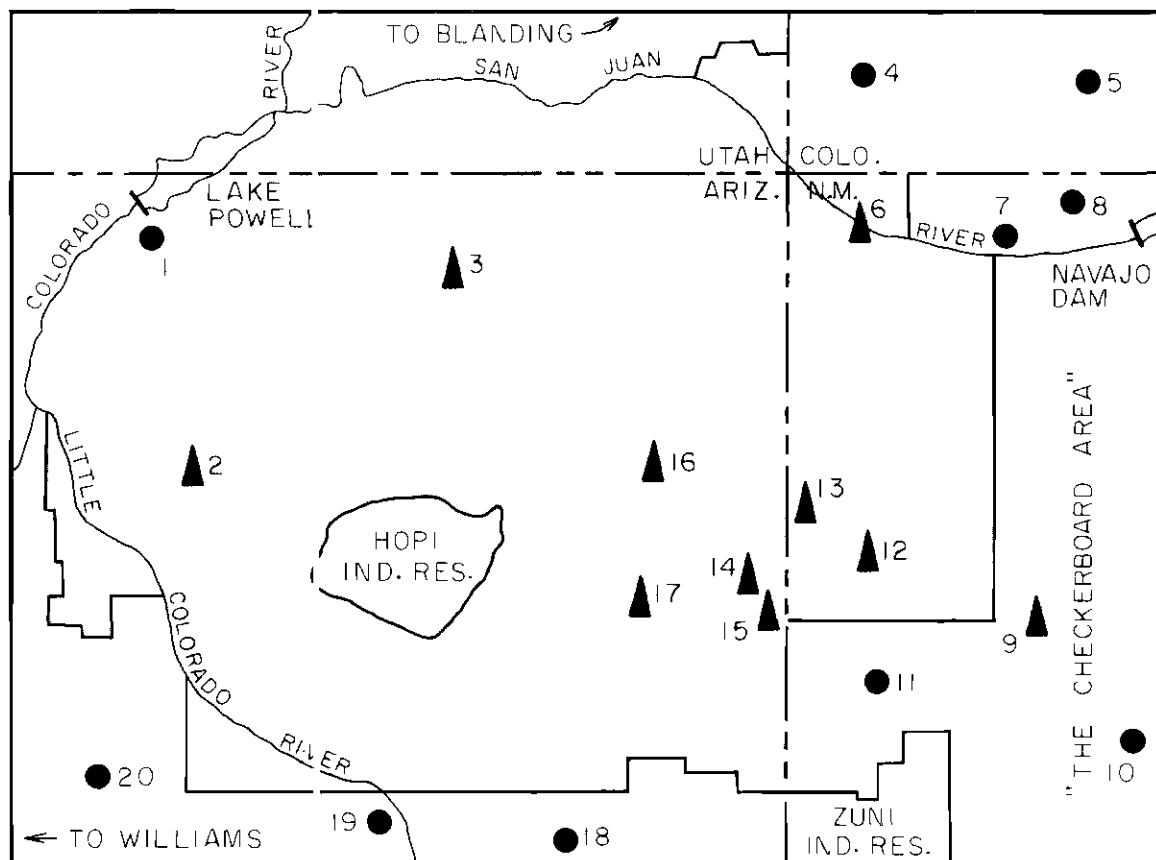


Figure 1

## Political Boundaries

Key Towns

▲ Navajo towns

● Bordertowns

1. Page
2. Tuba City
3. Kayenta
4. Cortez
5. Durango
6. Shiprock
7. Farmington
8. Aztec
9. Crownpoint
10. Grants

11. Gallup
12. Tohatchi
13. Navajo
14. Fort Defiance
15. Window Rock
16. Chinle
17. Ganado
18. Holbrook
19. Winslow
20. Flagstaff

At least 80,000 of these lived within the Navajo Country. Most of the others lived in the bordertowns (shown in Figure 1) or in California (where they have moved to take advantage of employment opportunities). Within the Navajo Country itself, in 1960, an estimated 45,663 Navajos lived in Arizona; 32,670 in New Mexico; and 2,031 in Utah. (2) Population densities per square mile for the reservation proper are approximately 3.7 for the New Mexico portion, 1.9 for the Arizona portion, and 1.0 for the Utah portion.

Despite the sparsity of its population, the reservation contains more people than can make a decent living from the developed resources. There is a dangerous imbalance between population and developed resources which is reflected in overgrazed and eroded land, in low educational attainment, meagre buying power, and poor health and housing conditions.

In short, the Navajos are an underprivileged people and their homeland is an underdeveloped area. The reservation is a chronic labor surplus area by Area Redevelopment Administration standards. However, resources are there that can be developed to give the Navajos a standard of living on a parity with that enjoyed by other citizens of Arizona, Utah, and New Mexico if certain obstacles to their development can be removed.

This thesis will provide guidelines for planning the development of the Navajo Indian Reservation so that steady jobs and their attendant advantages will be available to the

members of the Tribe. Emphasis will be on resource development, but community development will also be discussed when it has a bearing on the main theme. According to the Bureau of Indian Affairs Task Force Report of 1961, three goals should motivate all efforts to improve the Indians' lot:

(1) maximum Indian economic self-sufficiency; (2) full participation of Indians in American life; and (3) equal citizenship privileges and responsibilities for Indians. (3) It is a basic assumption of this thesis that job development and urbanization will hasten the social and political assimilation of the Navajos into the mainstream of American life. However, it is by no means assumed that the Navajos must lose their identity as Navajos in order to enjoy a higher standard of living. They will definitely have to make some concessions to the dominant society's ways of doing, but this does not mean that the Tribe and the reservation should be abolished. In fact, it is a tacit assumption of this thesis that the Navajo Reservation will have a continued existence as a single political entity long enough to make workable a program of planning and development as recommended in this thesis.

In addition to whatever jobs are created on the reservation or in its immediate vicinity, the creation of jobs in distant cities holds considerable promise as an outlet for Navajos. The Bureau of Indian Affairs has a program whereby it relocates selected Navajos in Los Angeles, Oakland,



Denver, Dallas, Chicago, and other big cities. Between 1952 and 1960 some 3,300 Navajos were assisted in moving and settling. They were also given on-the-job training at Federal expense. Although the program has not been outstandingly successful to date, it is bound to grow as increasing numbers of Navajo youths graduate from high school. These youths will be equipped with language and other skills which will enable them to make a living outside the reservation area.

Certain unusual terms will be used in the thesis. They will ordinarily be explained when they are first used. One such term is "Anglo." It is New Mexican slang for non-Indians. Many 'Anglos' live and work on the reservation, but their needs will be treated only incidentally.

### Natural Resources

The basic natural resource belonging to the Navajos is their land. It must be retained. The Navajo land base has not been extensively allotted as has the land of some other tribes, but has remained under tribal jurisdiction. This is fortunate since modern land management and resource development programs require sizeable tracts of land under unified control. Other geographical elements that merit brief discussion here are water, climate, agriculture, forests, and minerals.

## Land

There are four general types of land owned or used by Navajos: (1) tribal trust lands; (2) allotted trust lands; (3) private fee lands; and (4) Bureau of Land Management administered grazing lands. The category "tribal trust lands" includes all but 161,000 acres of the reservation proper along with about 248,000 acres lying outside of the reservation. These lands are not subject to taxation. The category "allotted trust lands" includes 90,000 acres lying within the reservation and 572,000 lying outside that have been allotted to individual Navajos. The category "private fee lands" includes 70,000 acres owned by non-Navajos lying within the reservation and 200,000 acres outside of its boundaries owned by the Tribe. Private fee lands are, unless held by missions, subject to taxation. The fourth category includes 230,000 acres of railroad exchange lands (which are considered a part of the Tribe's permanent land base) and about 600,000 acres of Taylor Grazing Act lands (which can be withdrawn from Navajo use at any time). (4)

These distinctions in land status have been mentioned because each of the different types of land has its own characteristics with regard to title-holder, trusteeship status, tax liability, alienation, encumbrance, lease terms, and income destination. A developer needs to find out what he can or cannot do with whatever tract of land he is interested in leasing.

## Water

The whole of the Navajo Country is part of the Colorado Plateau, an extremely dissected region. The area straddles the divide separating the watersheds of the San Juan and Little Colorado Rivers--two of the main tributaries of the mighty Colorado River. The San Juan River has an average annual discharge of 2,500,000 acre feet (almost twice that of the famous Rio Grande). The Little Colorado River and various mountain brooks flow intermittently. Lakes and ponds are scarce--there being only a couple of dozen good-sized artificial ones. Ground water is obtained mostly by well drilling, but this is extremely costly in some parts of the reservation. About 30,000 acres can be irrigated during periods of plentiful moisture. About 10,000 acres are irrigated from the San Juan River. The other 20,000 acres, which depend on small reservoirs, do not have an assured water supply. (See Figure 2.) It is estimated that about 145,000 additional acres could be irrigated from potential surface water impoundments. (5) Water power development, present and potential, is limited to the Colorado River.

## Climate

Most of the Navajo Country lies between elevations of 5,000 and 7,000 feet. However, there are three distinct climatic zones within the Navajo area: (1) the comparatively warm desert (about 55 per cent of the area); (2) the intermediate steppe climate of the mesas and high plains (about

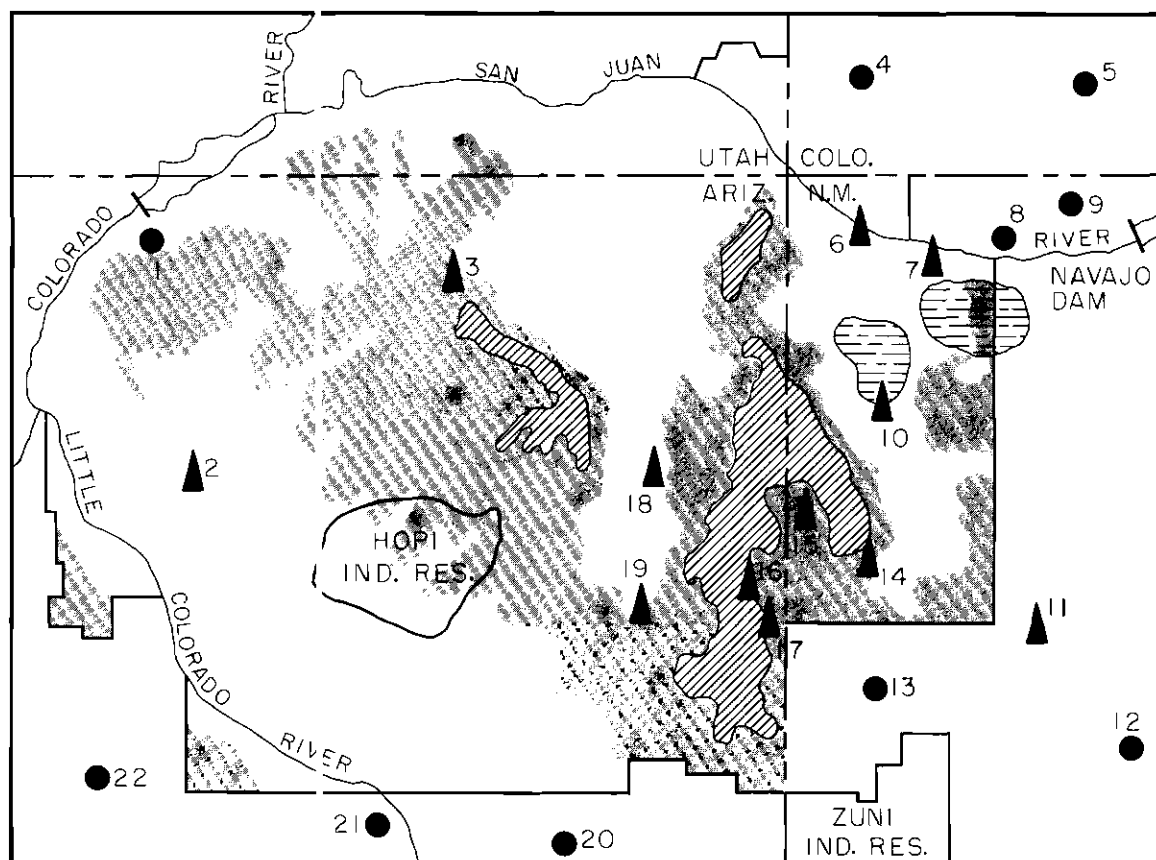




Figure 2

## Climatic Zones and Organic Resources

	Desert Zone		Humid Zone
	Steppe Zone		Navajo Irrigation Project lands

## Key Towns

- |                        |                       |
|------------------------|-----------------------|
| 1. Page                | 12. Grants            |
| 2. Tuba City-Moencopie | 13. Gallup            |
| 3. Kayenta             | 14. Tohatchi          |
| 4. Cortez              | 15. Red Lake-Navajo   |
| 5. Durango             | 16. Fort Defiance     |
| 6. Shiprock            | 17. Window Rock       |
| 7. Fruitland           | 18. Chinle-Many Farms |
| 8. Farmington          | 19. Ganado            |
| 9. Aztec               | 20. Holbrook          |
| 10. Newcomb            | 21. Winslow           |
| 11. Crownpoint         | 22. Flagstaff         |

37 per cent of the area); and (3) the cold, humid climate of high altitudes (about 8 per cent of the area). (See Figure 2.) Rainfall within these zones averages 7-11, 12-16, and 16-27 inches, respectively. The growing season varies from 95 days in the humid zone to 173 days in the desert zone. The growing season in the steppe zone is about 147 days. (6) Wide fluctuations in temperature, high evaporation rates, sudden thunderstorms, and periodic high winds are common to all three zones.

### Agriculture

Only 33 per cent of the soils of the reservation area are classified as excellent or good. In addition to the irrigated tracts, about 20,000 acres are dry farmed in an average year. These dry and irrigated farms produce corn, beans, melons, squash, and alfalfa on a strictly subsistence basis. Fully 15 per cent of the soils are totally unproductive badlands. The remaining 52 per cent are good only for grazing sheep, goats, horses, and cattle. In 1959 there were about 290,000 mature sheep, 80,000 mature goats, 22,000 mature horses, 15,000 mature cattle, and 190,000 lambs on the reservation proper. (7) Desert and steppe vegetation, which covers most of the reservation range, varies from grasses to junipers and other browse plants. The grasses are sparse and very slow to recover after depletion. The browse plants make poor forage.

## Forests

The humid zone embraces the reservation's significant coniferous forests, including over two billion board feet of merchantable timber. About 98 per cent of the reservation's merchantable timber is ponderosa pine. The remainder is Douglas fir, white fir, and spruce. The timberlands are located primarily in the Fort Defiance Plateau-Chuska Mountains area. (See Figure 2.)

## Minerals

The chief minerals present on the reservation are oil and gas (including helium), bituminous coal, carmotite (a uranium-vanadium ore), copper, manganese, limestone, gypsum, various kinds of clay and construction materials (such as sand and gravel). The reservation and its environs are fast becoming a major oil-producing region. In 1960, 860 wells on the reservation produced 34,272,928 barrels of oil. That was one-half of all the oil produced on the reservation since 1935. Also in 1960, 26 gas wells produced 18,556,360 cubic feet of natural gas and helium. (8) Two oil pipelines and four natural gas pipelines serve these fields in what has come to be called the "Four Corners Area." (See Figure 3.)

The reservation's coal is located in two huge fields--the Gallup-Durango field of New Mexico and the Black Mesa field of Arizona. (See Figure 3.) This resource is just beginning to be commercially exploited. Uranium and vanadium mining takes place in three general areas of the reser-

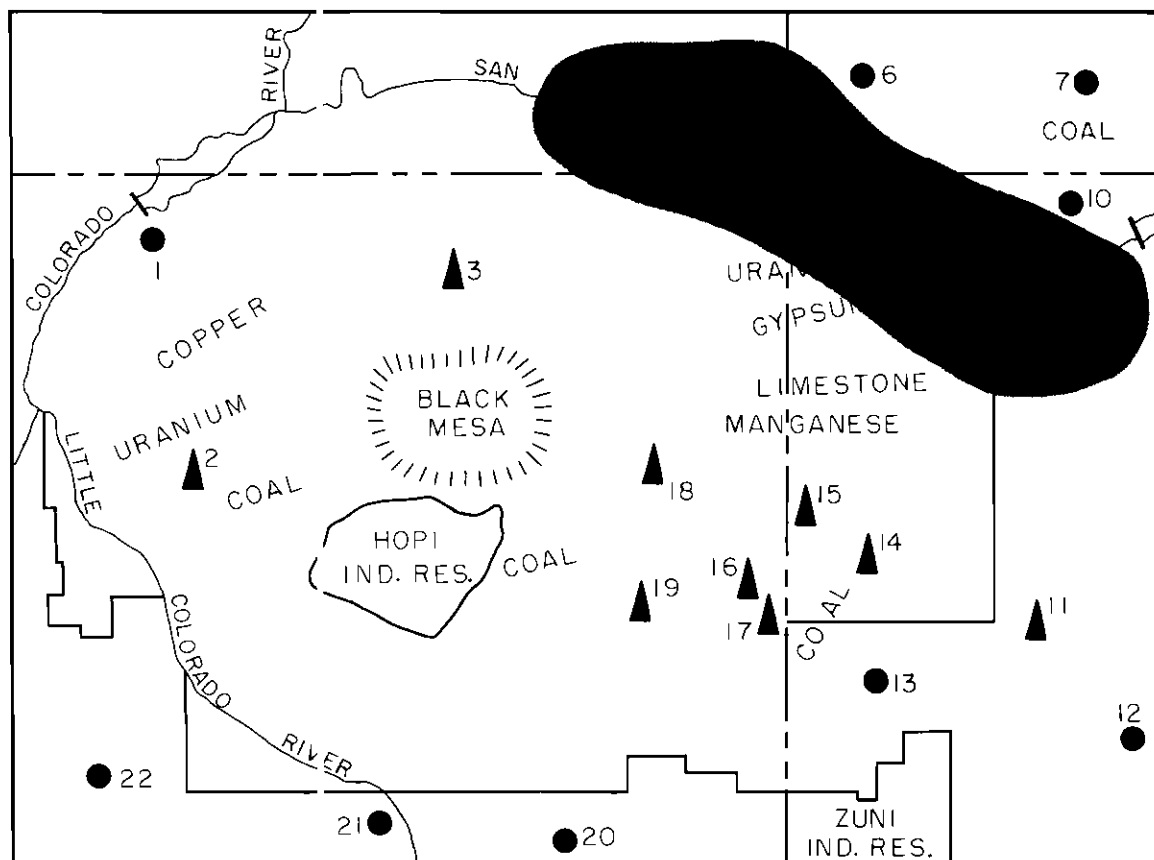


Figure 3

## Mineral Resources



Four Corners oil producing area



Navajo towns



Bordertowns

## Key Towns

- |                |                   |
|----------------|-------------------|
| 1. Page        | 12. Grants        |
| 2. Tuba City   | 13. Gallup        |
| 3. Kayenta     | 14. Tohatchi      |
| 4. Mexican Hat | 15. Navajo        |
| 5. Aneth       | 16. Fort Defiance |
| 6. Cortez      | 17. Window Rock   |
| 7. Durango     | 18. Chinle        |
| 8. Shiprock    | 19. Ganado        |
| 9. Farmington  | 20. Holbrook      |
| 10. Aztec      | 21. Winslow       |
| 11. Crownpoint | 22. Flagstaff     |

vation--as shown in Figure 3. Milling of these metals is performed at three locations on the reservation: Shiprock, New Mexico; Mexican Hat, Utah; and Tuba City, Arizona. The reservation's copper and manganese deposits are not presently being exploited although reserves appear to be sizeable; this is mainly because of market and transportation factors. Sand and gravel have been exploited to a modest degree, but markets have not as yet been developed for the other non-metals.

### Human Resources

The human resources of the Navajo Reservation must be described in terms of both numbers and characteristics. To this end, the following topics will be treated briefly: population, health, housing, urbanization, values, education, employment and income, and reservation government.

#### Population

The Navajo Tribe, with its 90,000 members, is the largest Indian tribe in the country. It is growing at the rate of between 2.5 and 3 per cent per year. When compared to the nation's current growth rate of about 1.7 per cent, it can be seen that the Navajos are increasing much faster than the general population. If this trend continues, there will be upwards of 110,000 Navajos by 1970. The implications of this explosive growth for reservation resources are frightening.

The age-grouping of the Navajo population is highly



significant. According to school census data compiled in 1960, 56.8 per cent of the total estimated Navajo population is under 20 years of age. For the nation at large, the figure for 1960 was 38.5 per cent. The median age of the Navajo population was between 17 and 18 years, whereas for the general population it was 29.5. (9) Only 4 per cent of the Navajo population is over 65, as compared with 9 per cent for the nation.

### Health

Health conditions are still very poor on the Navajo Reservation, although much progress has been made within the last decade. As late as 1948 it was reported that there were ten times as much tuberculosis among the Navajos as among the general population. Trachoma, the dread eye disease, afflicted about four per cent of the Navajo population, whereas it was almost unheard of anywhere else in the country. Of the six leading causes of death in 1958, four were either infectious or preventable or in some other way related to bad sanitation. Not counting accidents of all kinds (which were the top killers) and heart diseases (which ranked fifth), the order was: (2) influenza and pneumonia; (3) certain diseases of early infancy; (4) gastritis, duodenitis, and enteritis; and (6) tuberculosis. (10)

The over-all Navajo death rate is about the same as that for the rest of the country, although the incidence of death is different. In 1957, the Navajos' infant mortality

rate stood at 74.7; whereas, for the general population, the rate was only 26.3. The high infant mortality rate which besets the Navajos is attributable in large measure to the reservation's poor housing and environmental health conditions.

### Housing

The traditional Navajo dwelling is the hogan--a dome-shaped structure made of logs or stone and mud. Hogans ordinarily have a single room with a dirt floor; hence, they are hard to keep clean and dry. The older ones have no windows to admit light and air, but only a smoke-hole in the ceiling and a door which, by tradition, always faces east. Few hogans have electricity and few have privies nearby.

The basic Navajo settlement is the "camp." A "camp" is a collection of a half-dozen or so hogans and shacks which are generally spaced not more than a few hundred feet apart. The residents of a "camp" are all members of what is called an extended family. An extended family is a group of closely related biological families which operates as a single production and consumption unit. The relationship is strictly economic except that a certain degree of leadership inheres in the "head couple." The usual practice is for a newly married couple to live with the wife's parents. Thus, the wife's sisters and their husbands and children will normally make up the balance of the camp entourage. A group of related extended families who habitually band together

for certain agricultural or ceremonial purposes is called an "outfit." An "outfit" constitutes a sort of land-use community, inasmuch as it is identifiable with a specific area.

Were it not for the scattered pattern of settlement which the pastoral Navajo life necessitates, the poor sanitary practices of the Navajos might well have kept their numbers down to the levels typical of the neighboring Pueblo Indians. (11)

The necessity of hauling water long distances makes personal hygiene very difficult. Recent surveys by the U. S. Public Health Service revealed that 52.3 per cent of the families visited had to go more than two miles for water. Other studies by the same agency in eight selected communities on the reservation showed that 84.3 per cent of the Navajo homes had less than 400 square feet of floor space. In 13.6 per cent of the homes surveyed, eight or more persons occupied a single room. Studies of housing types made in seven of these eight Navajo communities revealed that 45.1 per cent of the homes were hogans, 31.4 per cent were frame structures (mostly shacks), and 12.6 per cent were log cabins. The other 10.1 per cent represented a variety of dwelling types. (12)

There are, of course, some adequate homes on the reservation, most of them in the towns. Many Navajos live in government employee housing. Much of this housing is

prefabricated, but some masonry units are available to Navajos. Housing for Anglos has also been a long-standing problem. Lack of suitable housing near some of the schools, offices, and especially hospitals makes recruiting of personnel difficult. The uranium mills and natural gas companies have built worker villages to house at least their key personnel. Some Anglos live in mobile homes. In short, almost all segments of the reservation population need better housing than is now available to them.

### Urbanization

Since the Navajos are not by custom town-dwellers, there has been very little urbanization on the reservation to date. The only sizeable towns which do exist are focused mainly on government installations like schools, offices, and hospitals. The Fort Defiance-Window Rock-St. Michaels triangle is the largest urban concentration at present with about 2,300 population. Shiprock has about 2,000 inhabitants (counting the farmers on the adjacent Hogback Irrigation Project) and the Tuba City-Moencopi urban area has about 1,500 residents (half of whom are Hopis). Other important, though smaller, towns are Chinle, Crownpoint, Ganado, Kayenta, and Tohatchi. (See Figure 1.) A completely new town, to be known as Navajo, is being built at Red Lake on the Arizona-New Mexico border to serve the new tribal sawmill. It will have a population of about 2,400 when it is fully developed. (13)

## Values

The Navajos have long been noted for their adaptability. In this trait they resemble the Japanese. The Navajos borrowed many useful techniques and a significant portion of their ceremonial lore from the neighboring Pueblo Indians. They have also borrowed many useful devices and motivations from the modern industrial society into which they are being so briskly ushered. Those who have studied the Navajos carefully have concluded that:

Navajos are perfectly capable of learning white skills and white customs. But when the traits of another culture are learned externally and one by one, without the underlying concepts and premises of that culture, the learners feel uncomfortable. They sense the absence of the fitness of things, of a support which is nonetheless real although difficult to verbalize. (14)

The Navajos are accustomed to an informal system of social control, based on family pressures, which tends to break down when individuals leave the extended family fold and move to town. The pressures which are exerted by a modern industrial society to bring about conformity and harmony seem very strange to tradition-oriented Navajos. This may explain why the white man's legal institutions are not accepted unreservedly by the Navajos. Only by patience will the Navajos be taught the value of formal rules.

Another aspect of Navajo social organization and values which must be understood by those who are introducing technological changes among them is the importance of the

family. Navajo society, as all other primitive societies, is kin-based rather than civil. This explains the pattern of sharing which typifies Navajo family life. It also explains why Navajos frequently act as if their "sings" (ceremonials) were more important to them than their jobs.

The values which seem to mean the most to Navajos are: (1) family; (2) harmony; (3) health; (4) enjoyment; (5) possessions; (6) security; (7) knowledge; and (8) industry. One of these values, harmony, seems to underlie all the others. Man must do all he can to stay in tune with his fellow man as well as with nature. Illness and calamity are viewed as punishments for disturbing this equilibrium. Once the Navajos are convinced that germs cause certain types of disease, they will be easier to sell on housing improvement. Another aspect of the traditional Navajo quest for harmony is the comparative noncompetitiveness of Navajo motivations. This noncompetitiveness makes it hard for Navajos to play the role of businessman.

### Education

Since 1950, owing to a number of highly imaginative and very successful programs, giant steps have been taken toward getting all eligible Navajo children in school. The goal was almost reached in 1960 with only 4,336 school-age children (out of a total of 31,743) still not in school. (15) For the adults, however, the picture is much dimmer. It is estimated that about two-thirds of those Navajos over

the age of 30 cannot read, write, or speak the English language passably. Unless something is done to improve adult literacy, a sizeable pool of otherwise employable people will remain largely untapped. This will be a tragedy, not only for the individuals involved, but also for the nation, because Navajo workers are generally sturdy, loyal, and quick-witted.

#### Employment and Income

As things now stand, only about one-quarter of the reservation's estimated 16,000-plus Navajo family heads have regular jobs and steady income. The mean annual earnings of this group in 1960 was about \$4,000 per worker. (16) Another 5,000 or so persons are employed part-time by going concerns on the reservation. An indeterminate number of Navajos collected wages under the Tribe's public works programs and from off-reservation agricultural and non-agricultural employment. These wage categories are highly seasonal. About 1,500 Navajos received wages from railroad work. Railroad unemployment and retirement compensation is an important factor in the Navajo economy. Income from reservation agriculture and stock-raising (sold and consumed) seems to be established at about \$4 million per year and income from the sales of arts and crafts probably does not exceed \$500,000. Income from mineral leases on allotted lands declined from about \$2,250,000 in 1958 to \$803,178 in 1960. (17)

The estimated per capita cash income earned by Navajos

in 1960 was \$521. Counting the value of unearned cash and noncash income (such as social security, general welfare, tribal scholarships, schoolchildren's clothing and meals, surplus commodities and emergency livestock feed, and the value of U. S. Public Health Service medical services) the estimated per capita income was \$645. For the average five-member family, the average family earned income would, therefore, come to about \$2,600. For the same sized family, counting unearned cash and noncash income, the average family income would be about \$3,225. (18) By way of comparison:

The estimated average per capita income[s] described above for Navajos resident in the Reservation area compares with \$1,812 estimated for the State of New Mexico generally, \$1,709 for McKinley County, New Mexico, and \$2,166 for the nation. Even with inclusion of the value of free services, the average per capita income of Navajos in the Reservation area is only 35.6% of the comparable amount received, on an average per capita basis, by other citizens of New Mexico, and it is only 29.8% of the comparable amount received by fellow citizens of the United States. (19)

Estimates of the number of persons employed in each major economic activity will be given in succeeding chapters. Three characteristics of the Navajo economy should, however, be pointed out here: (1) its overwhelming dependence on government spending; (2) its primarily extractive nature; and (3) the significance of welfare aid.

Some 54 per cent of all Navajo earned income is derived from government payrolls, and another 6 per cent is derived from extractive and construction operations which



are sponsored by governments. The remaining 40 per cent of the total earned income is derived mainly from privately-managed extractive activities (22 per cent) and distribution and service activities (18 per cent). Taking all of these earned income categories together, they produce 68.8 per cent of the total estimated Navajo income--leaving 31.2 per cent to come from various kinds of welfare aid. (20) The enormity of the welfare load which is carried by the Federal, State, and Tribal Governments is an indication of a depressed economy. Nevertheless, its most deplorable aspect is the effect which chronic dependency has on the Indians' mental outlook and self-esteem.

#### Reservation Government

Three levels of government share in the administration of Navajo affairs: Tribal, Federal, and State. Of these, the Tribal Government is the most unique. It is also the initiator of a majority of the new programs which affect the Navajos. The Federal Government formerly had an all-pervasive role in the administration of the reservation, but its prerogatives are gradually being relinquished to the Tribe or to the States. The States play a relatively minor role in reservation government--limited mostly to the provision of certain services by contract.

The Navajo Tribal Council. The Navajo Tribe operates as a political entity under a set of regulations promulgated in 1938 by the Secretary of the Interior. It is not organ-

ized under provisions of the Indian Reorganization Act of 1934, i.e., it has no formal constitution. In the Tribal Government there are no really clear-cut demarcations between the legislative, executive, and judicial branches of government. The Navajo Tribal Council, a 74-member body, is the legislature of the Navajo Tribe, yet its powers and duties have nowhere been defined or delimited. Tribal councilmen are elected by popular vote to serve four-year terms. They represent geographical areas called precincts or districts--of which there are 74. The presiding officer of the Council is the Chairman or, in his absence, the Vice-Chairman. These officers are elected by popular vote to serve four-year terms. Matters of policy and budgeting must be approved by a majority of the Council.

Many of the Council's prerogatives have been delegated to a nine-member executive committee known as the Advisory Committee. This very important body acts in the place of the Council between Council meetings. The Council and the Advisory Committee legislate by resolution, and these resolutions become a part of Navajo law if not set aside by the Bureau of Indian Affairs. The Council also utilizes a number of standing committees (comprised, for the most part, of Council members) to study various proposals and coordinate tribal programs. The most important of these committees are the Budget and Finance Committee and the Resources Committee. Others are the Health, Education, Welfare, Police, Judiciary,

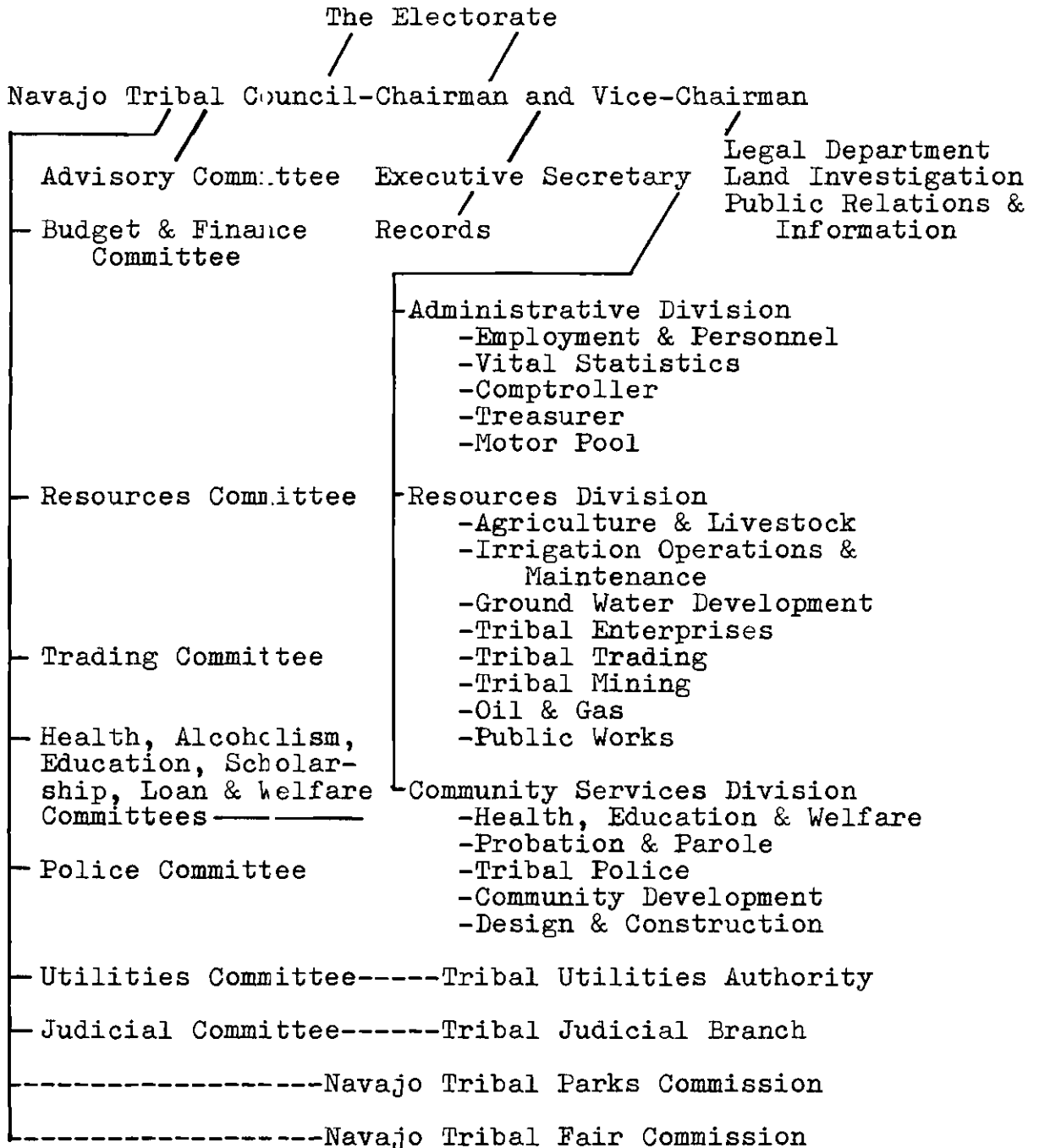
Relocation, Loan, Trading, Utilities, Alcoholism, and Scholarship Committees and the Tribal Fair and Parks Commissions. (See Table 1.)

The Chief Executive of the Navajo Tribe is the Chairman of the Tribal Council. He is assisted by the Vice-Chairman. Directly under the Chairman's Office come the Legal, Land Investigation, and Public Relations and Information Departments. An appointed Executive Secretary is in charge of the other line departments. These departments come under three grand divisions, as shown in Table 1. It will be noted from Table 1 that, instead of being a line department, the Tribal Utilities Authority comes directly under the Tribal Council's Utilities Committee.

The Tribe's Judicial Branch is composed of seven judges, including a Chief Judge, appointed by the Chairman. These men do not have law degrees, but they are familiar with tribal customs and usages. Aside from the "11 major crimes," which are prosecutable only in Federal courts, all crimes perpetrated by Navajos against Navajos while on the reservation are tried in Tribal Courts. Domestic matters and inheritance are also handled by these courts. Non-Navajos can bring suit against individual Navajos in these courts, but only under certain conditions.

There are no local town governments on the reservation at present. Consequently, the majority of public services and facilities which would normally be furnished by such

Table 1. Organization Chart--The Navajo Tribe



governments are, in the Navajo Country, furnished by the Tribe or the Federal Government. There are, to be sure, 96 rural community organizations called "chapters" on the reservation. "Chapters" are organized upon petition by 100 adult Navajos living within a given land use community. The chapters perform a few duties on behalf of the Tribal Government, notably local public works administration. They also sponsor various recreational and educational activities which center around the chapter houses which have been built by the Tribe.

The Federal Government. The Federal Government exercises a wide range of administrative responsibilities on the Navajo Reservation. Congress is the supreme and final authority in the field of Indian affairs. Its policies are carried out by the Bureau of Indian Affairs (hereafter called BIA) of the Department of the Interior and by the U. S. Public Health Service (hereafter called the USPHS) of the Department of Health, Education and Welfare.

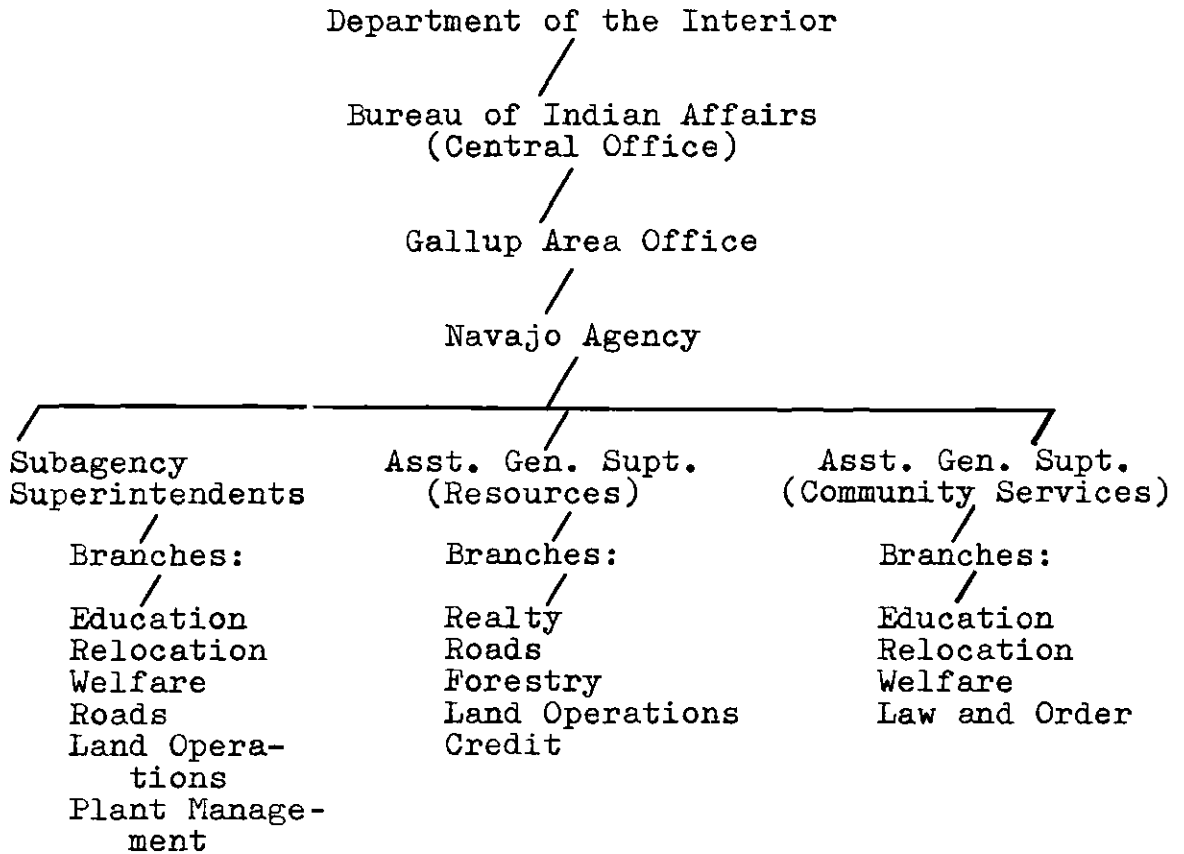
The line of authority within the BIA extends down from the Commissioner of Indian Affairs to the Area Director (who, in the Navajo case, is stationed in Gallup) and, in turn, to the General Superintendent of the Navajo Agency (with headquarters at Window Rock). The Gallup Area Office has jurisdiction over five other agencies besides the Navajo Agency. One of these, the United Pueblos Agency, has charge of 20 different tribes. Still, the majority of the Gallup Area Office's work pertains to the Navajos.

The General Superintendent of the Navajo Agency has two assistant general superintendents who head up the Agency's Resources and Community Services Divisions, respectively. The various branches of each division are shown in Table 2. In addition, there are five subagency offices (each of which is headed by a subagency superintendent) located at Fort Defiance, Crownpoint, Shiprock, Chinle, and Tuba City. These subagencies administer certain services on a more local (hence convenient) basis. (See Table 2.)

The U. S. Public Health Service plays a prominent role on the reservation. Not only does it care for the Navajos' medical needs, it also conducts a comprehensive environmental health program. The USPHS is organized somewhat like the BIA--except that its area office is in Albuquerque. The Window Rock Field Office supervises nine "service units." These "service units" are based at six hospitals and three health clinics.

The State and County Governments. The States provide the following services to reservation Indians: (1) administration of certain social security benefits (old age assistance, aid to dependent children, and aid to the blind); (2) employment services; (3) maintenance of certain paved highways; (4) issuance of birth and other certificates; (5) institutional care for certain unfortunates; (6) book-mobile service (New Mexico only); (7) technical advice on fish and wildlife matters; and (8) tourist publicity.

Table 2. Organization Chart--Bureau of Indian Affairs



The counties provide the following services: (1) public schools (in the larger towns); (2) agricultural extension (in McKinley County, New Mexico, only); and (3) polling places for state and national elections. Most of these functions (of both States and counties) are heavily subsidized by Federal funds--made necessary because reservation lands and income are not subject to taxation by the States or by the counties.

Summary. Considering the grounds for possible friction where three levels of government interact within a restricted but changing power structure, it is remarkable that so much co-operation and progress have resulted lately. True, there are times when the Tribe goes on the war path against county commissioners who fail to set up convenient polling places or against officials of the Gallup Area Office who tolerate red tape. Time and circumstances, along with dynamic leadership, will surely bring about a better allocation of governmental powers and services than now exists.

#### From Blanket to Business Suit

The title of this chapter summary is meant to symbolize the transition which a few Navajos have already made and which many more Navajos must make before the Navajos as a whole will have a standard of living comparable to that of their white neighbors and before they will enjoy the fullest



possible self-determination.

The two following chapters will explore the ways and means of increasing employment and income in eight major economic activities. These eight activities will be grouped as follows: (1) Extractive and Primary Processing Activities and (2) Manufacturing, Trade, and Tourism Activities. These divisions reflect, in general, the degree of sophistication and urbanity required by their installations and participants.

Chapter IV will treat Public Services and Facilities needs which underlie all of the economic developments recommended in the two prior chapters. Chapter V will discuss proposed governmental reorganizations which will help to streamline the development agencies which must carry out the proposed development activities.

## CHAPTER II

### EXTRACTIVE AND PRIMARY PROCESSING ACTIVITIES

The following economic activities engaged in by Navajos are considered extractive: grazing, farming, forestry, and mining. Each of these activities, when optimally developed, entails certain primary processing operations which are logically discussed in conjunction with the raw materials involved rather than with manufacturing.

The emphasis of this chapter will be on a description of the present development of each activity and an evaluation of the outlook for growth in each. For this reason, employment and market factors will be especially noted.

#### Grazing

Grazing is the traditional basis of the Navajo economy. It is also, understandably, the basis of Navajo social organization. The extended family pattern of living stems from and depends on a pastoral economy. Livestock have traditionally served as the standard and symbol of wealth among Navajos. Nevertheless, income from stock-raising has declined in recent years--not in terms of absolute value but in proportion to other sources of income. As late as 1940 livestock, along with a minor amount of agriculture, provided 58 per cent of total estimated Navajo income. In 1960 live-

stock, along with an increased amount of agriculture, produced only 11.1 per cent of the earned income and 7.7 per cent of the total Navajo income. (21) While the livestock industry cannot regain its former dominance as a source of income, the absolute value of livestock products can be increased. Two major programs, closely inter-related, are needed to strengthen the livestock industry: (1) range and stock improvement; and (2) consolidation of herds and flocks.

#### Range and Stock Improvement

Grazing, as a land use, is widely distributed over the Navajo Country. This does not mean, however, that it is distributed according to the carrying capacity of the land. Around watering places, the grass has been virtually depleted. In the more isolated areas, where water development has lagged, there is a fair amount of forage left. Considering the reservation as a whole, only about 387,000 "sheep units" can be safely grazed. (A "sheep unit" equals one sheep or goat or five horses or cows.) Yet the voluntary livestock count in 1959 showed 539,323 sheep units on the reservation range. It is no wonder that the ravages of erosion are taking a heavy toll of the range resources. It is estimated, for instance, that 676,000 acres of reservation lands formerly useable for grazing purposes are now depleted and that another 5,500,000 acres are in grave danger of depletion. (22)

In all fairness to the Tribe and the BIA, it should

be noted that certain things are being done to improve and extend the range. For instance, stock water development in presently undergrazed areas is proceeding rapidly. A variety of soil and moisture conservation programs are being carried out by the BIA's Branch of Land Operations. Junipers and other water-stealing browse plants which have invaded former grasslands are being eradicated. (If an economic use can be found for these junipers after they are uprooted, this eradication program can perhaps be expedited.) The Tribe has a program under which it purchases privately-owned off-reservation ranches which it allows Navajo stockmen to use for a fee. In connection with this land acquisition program, it is recommended that every effort be made to consolidate Navajo holdings in the "Checkerboard Area." Legislation has been presented to Congress that would authorize land exchanges. These exchanges are urgently needed to bring about more manageable range units.

Stock improvement is related to range improvement most critically where useless or unmarketable animals are allowed to remain on the range. The Tribe and the BIA have been promoting better breeding and culling practices for some time, but the average stockman seems unwilling or unable to profit by them. Goats and horses comprise almost 40 per cent of the total stock population in spite of the fact that markets for goats and horses are practically nil. Granted, a modest amount of mohair and milk is derived from the goats;

and the horses are used for riding and similar purposes. However, the Navajos could realize much more income from grazing if they would replace at least some of the more unproductive stock with sheep and cattle. The Tribe and the BIA frequently arrange auctions at which owners of unproductive stock may sell their surplus animals to off-reservation buyers. Recently, the Tribe has inaugurated a program of buying surplus animals outright. This is a "crash" program---justifiable only if the remaining animals are mostly those which can be marketed through the regular channels.

The "regular channels" are, in most cases, the trading posts. These unique mercantile institutions barter manufactured goods for lambs, wool, and other Navajo products. Credit is extended between the lambing and shearing seasons on the basis of a person's expected lamb or wool crop or on the basis of pawned jewelry and other valuables.

A meat-packing plant would be a logical outlet for those animals which cannot be marketed through the regular channels. This plan could provide a good grade of beef and mutton to reservation schools and hospitals. It could also process poor quality animals for dog food. A study is under way to determine the feasibility of locating such a plant in the San Juan County portion of the reservation. (23)

#### Consolidation of Herds and Flocks

Another of the critical problems confronting the grazing industry is that of too many grazing permits. Grazing

permits are licenses issued to individual stockmen to graze a certain number of "sheep units" on their customary range for an indefinite period of time. In 1959 there were 8,390 grazing permits outstanding for the reservation proper and another 2,300 for the off-reservation lands used by Navajos. (24) Considering that there were only about 16,000 Navajo families living within the Navajo Country in 1959, the existence of 10,690 permits is shocking. However, many Navajo families hold more than one permit.

When the distribution of animals among permit-holders is examined, it becomes apparent that very few Navajos can depend wholly on stock-raising for a livelihood. At least 300 sheep are needed for an economic-sized flock, yet no more than 0.6 per cent of the permittees (about 600) in 1957 were authorized to graze that many sheep. Even if the entire carrying capacity of the reservation range were allocated to economic-sized herds and flocks, only about 1,300 Navajo families could enjoy an income comparable to that of a typical Navajo salaried worker.

The only way that grazing can ever become a truly economic activity will be for herds and flocks to be consolidated. This will not be easy, but it can be done. The Navajos are fortunate to have, under tribal control, a large block of land which can be managed pretty much as the Tribe sees fit. The main reason that the Tribe has not enforced better range conservation measures than it has is the fact

that so many of the small operators have no other vocation or source of employment besides herding. With development of more jobs in farming and farm service, forestry, mining, manufacturing, trade, and tourism, it should become feasible to consolidate herds and flocks and to decrease the number of grazing permits outstanding. The whole process should be very gradual else it will disrupt extended family and "out-fit" patterns before the individuals involved have made the proper adjustments. Even then, families should be allowed to keep a few animals for family use.

One way to decrease the number of permits would be to oblige those who have received vocational training assistance from the Tribe or the BIA to surrender their permits. Another way would be to reform the present system of inheritance which increases the number of permits and further fractionates the range. The Tribal Council will have to act on this matter.

A third way to consolidate herds and flocks would be to extend credit to stockmen who use good husbandry practices to enable them to buy out the smaller operators. Money needed to purchase permits and animals could come from the Revolving Loan Fund which the Tribe and the BIA have capitalized and administered jointly. The transfer of grazing permits is now administered by the grazing committees which function in each of the 18 land management districts into which the reservation and its Navajo-occupied environs are

divided. These grazing committees, along with existing district loan committees, would be the logical agencies to bring potential buyers and sellers together and to help arrange loans. Problems which could not be solved at the local level would be referred to the Central Grazing (i.e., Resources) and Loan Committees of the Tribal Council.

### Farming

Farming has been practiced by the Navajos for centuries. However, this farming was wholly of the subsistence type until recently. The income a farmer obtained from his plot of ground was usually supplemented by the wages which he and his family earned in seasonal off-reservation agricultural work. Both floodwater irrigation and dry farming techniques were used.

Today, controlled irrigation is by far the most important type of farming. In a good year, about 30,000 acres can be irrigated from existing storage facilities. A substantial amount of dry farming is also practiced. However, dry farming is feasible only in the meadows of the humid zone and these clearings are already being used as intensively as possible. The only valid hope for an expanding reservation farming base resides in irrigation based on reservoirs.

### Existing Irrigation Projects

The largest single block of presently irrigated farm



land lies in the Shiprock-Fruitland area, i.e., along the San Juan River. The Hogback and Fruitland Projects aggregate about 10,000 acres. These acres have an assured supply of water. Smaller irrigation projects are located at Many Farms, Red Lake, Ganado, and Tuba City. (See Figure 2.) They do not have an assured water supply although they are served by fair-sized reservoirs. Little can be done to increase the water supply for these latter projects except by heightening their dams. One or two dam-heightening projects are presently in the planning stage. Runoff studies justify these projects.

Much can be done to bring about more economic-sized farms on the reservation's existing irrigation projects. It is reported that:

In 1948, a total of 2,468 families used the available irrigation farmland on the reservation--an average of less than 9 acres per family--and the average value of family assignments was estimated at \$300 per unit. At the same time it was estimated that the total available acreage, if reassigned in the form of economic units, could actually support only 400 families at an acceptable economic level. (25)

A farm which produces an average annual crop worth only \$300, part of which is consumed by the family, is little more than a vegetable garden. About 5,200 acres were added to the category of irrigated land between 1950 and 1961. However, only eight of the 125 farms into which this acreage was divided included as many as 110 acres. It can be seen why the total crop value from irrigated acres has varied

between only \$500,000 and \$700,000 in recent years. (26)

The Tribe has instituted a system of land boards whose primary duty is to assign newly irrigated farm lands. These land boards function on the land management district level. Their policy is to assign tracts of an economic size which cannot be fractionated by inheritance. This very sensible policy can also serve as a guide to the reassignment and consolidation of older farms. Consolidation of older farms may have to be quite gradual, but it is plainly necessary. For one reason, seasonal agricultural employment is sure to decline in future years. Navajos will have to depend more fully on their own farms.

#### The Navajo Irrigation Project

Steps are being taken to bring into cultivation the 145,000 acres of irrigable land which is presently without water. In June, 1962, Congress authorized the Navajo Irrigation Project. When completed, in about 14 years, this project will provide an assured water supply to 110,630 acres of new land on the present or extended Navajo Reservation. The water will come by canal from the Navajo Dam which is now under construction on the San Juan River at a point some 40 miles east of Farmington. The project's irrigated lands will be located in two sections lying on the high plains to the south of the San Juan River in New Mexico. (See Figure 2.)

In anticipation of the problem of assigning these

newly irrigated lands to its members, the Tribe has developed a new concept of what a farm should be. The old subsistence aim has been discarded--and with it the idea that assignees need pay nothing for the privilege of using tribal farm lands. The 120-acre tracts on the new Navajo Irrigation Project will be leased to the individual operators for an annual rent based on the appraised value of the land. The assignees will be given a five-year rent-free period in which to establish themselves and to bring the land into production. (27)

It is estimated that 1,120 Navajo families will be able to make a satisfactory living from the 120-acre farms which will be assigned on the Navajo Irrigation Project. Another 2,240 should be able to make a living from service and related activities if such activities are developed on the reservation. (28) Intensive planning will be needed to take full advantage of the job opportunities which will be afforded.

Since the project will take several years to develop, it will be advisable for the Tribe to find ways to employ its members in the construction phase. This can be done by the Tribe's taking a contract to level land, build canals and siphons, and so forth. The Tribe's Heavy Equipment Enterprise can fulfill such a contract utilizing Navajo crews which it could train. This makes sense in view of the fact that the water users' association, which will be organized to distribute water and maintain the irrigation works, will be tribally-sponsored.

Crops and Processing. The types of crops raised on project lands and the amount of processing done on the reservation will have a great deal to do with farm service employment.

One thing is definite about the use of project lands: no crop will be grown that will aggravate the nation's farm surplus problem. This policy was established by an agreement between Congress and the Tribe when the bill was signed authorizing the project. The crops which are especially suited to the steppe and desert zone lands which make up the project include: alfalfa and other hay, winter and spring small grains, corn, melons, squash, beans, potatoes, turnips, carrots and other vegetables, and various kinds of fruits. It is recommended that vegetable and fruit growing be especially encouraged. There is an essentially untapped market for fresh, canned, and frozen fruits and vegetables among the Navajos--whose diet now centers around meat, bread, and coffee. Of course, the market for frozen foods, as also that for dairy products, depends for its growth on home refrigeration. Refrigeration will be possible only as the electrification of the reservation proceeds. The acquisition of new tastes by Navajo children who have attended boarding schools will also affect the market for vegetables, fruits, and dairy products.

The agricultural processing plants which ought to be initially feasible would be a fruit and vegetable cannery, a

dairy products plant, and a feed mill. The feed mill is suggested on the basis of the expectation that some of the project land will be used for growing stock feed.

It is extremely important from the standpoint of convenience to the farmers as well as that of employment of Navajos that the majority of farm service and supply, equipment repair, and food processing activities which stem from the project be located on the reservation. To achieve this objective, it is recommended that two new towns be developed. One of them should be located in the Newcomb-Bennett Peak area--the other on the plateau south of Fruitland. (See Figure 2.) These towns should not be on irrigable land--merely convenient to it. The Tribe should develop these towns much as it is developing the new town of Navajo.

Agricultural Education. Two aspects of agricultural education will be treated here: (1) the Tribe's Farm Training Project and (2) extension work.

The Tribe's excellent Farm Training Project provides an opportunity for selected Navajos to receive a two-year course in the fundamentals for modern irrigation farming. To date, the program has graduated more qualified farmers than could be provided with land. However, the program will have to be accelerated to keep pace with the development of the Navajo Irrigation Project--once the latter is fully under way. Trainees are paid subsistence grants during the two years they are in training. The wives of the farmers undergo

instruction in homemaking, poultry-raising, and other pertinent skills.

Agricultural extension is now the responsibility of the BIA--except in McKinley County, New Mexico. A contract has been signed with this county under provisions of the Johnson-O'Malley Act. It is recommended that a similar contract be signed between the BIA and San Juan County, New Mexico, to permit county agents to provide extension services to those Navajos living in the San Juan County portion of the reservation. Here is a situation where Navajo and Anglo farmers live right across the river from each other. There has long been a spirit of cooperation between Navajo and Anglo farmers in this area. There is no reason why extension work cannot be provided by the same agency for both groups. This reform will also help tie in the Navajo Irrigation Project with the rest of the county.

Financing the Farmers. Capital to set up the farmers who locate on the Navajo Irrigation Project will have to come either from: (1) the BIA-Tribal Revolving Loan Fund or (2) private lending institutions. It is estimated that \$25 million will be needed for machinery, improvements, and operating capital. This amounts to \$18,000-\$20,000 per farmer. (29) There is little likelihood that the Revolving Loan Fund can be capitalized in the amount of \$25 million just for the sake of the farmers. Neither is this necessary. Machinery, for instance, can be purchased with private

financing. Where physical improvements are concerned, the Tribe should make arrangements with private lending institutions so that they can make loans without qualms about the security of their investments. Since tribal lands cannot be encumbered in such a way as to stand in jeopardy of foreclosure, the Tribe would probably have to set up a mechanism whereby it would take over the farms and payments of tribesmen who defaulted on their obligations. The farms could then be reassigned to more promising operators. The Tribe could minimize its losses by maintaining a management service on the project to help assignees with their problems.

### Forestry

Lumbering was the first successful nonagricultural industry on the Navajo Reservation, and it is still one of the most important. As mentioned in Chapter I, the reservation's coniferous forests, and especially its ponderosa pines, are its primary timber resource. The exploitation of some 458,457 acres of merchantable timber is a tribal monopoly--managed by the Navajo Forest Products Industries. The only other timber resources of consequence are the reservation's 3,200,000 acres of pinyon and juniper trees. However, there is presently no commercial demand for these species. (30)

### Management

The Navajo Forest Products Industries is a tribal

enterprise, i.e., it is a business which is conducted under tribal auspices. A general manager is in charge of all operations. A management board has also been appointed to give advice on the conduct of the enterprise. This board includes some of the leading men in western lumbering. Capital for needed facilities comes from the Tribe; profits go to the Tribe.

An old sawmill at the town of Sawmill (Arizona) has been turning out about 17 million board feet of dressed ponderosa pine lumber each year since the early 1940's. The Tribe has recently built a new \$8½ million sawmill at Red Lake on the Arizona-New Mexico border and is planning a new town to house and serve the mill workers. The new mill's annual capacity on a one-shift basis will be 38 million board feet. The old mill will be operated at a capacity of 15 million board feet for another ten years in order to harvest the over-age trees in its immediate vicinity. After ten years, the old mill will be closed and cutting operations will be sustained at 38 million board feet per year. (31)

The BIA is now in charge of all forest protection activities. However, the Tribe pays about 50 per cent of the cost of these services through deductions from stumpage receipts. It is therefore recommended that the Tribe assume the BIA's forest protection duties. The Forest Products Industries could conveniently take over these duties.



### Employment and Job Training

Prior to the commencement of work on the new sawmill, not more than 250 persons were employed in forestry operations at any one time. Counting the 125 Navajos who were employed in the building of the new sawmill, there were 353 persons on the payroll of the Navajo Forest Products Industries in 1960. It is expected that many of those who worked on the new mill's construction will be employed in the operation of the mill. In fact, it is estimated that the Forest Products Industries will probably employ between 500 and 600 Navajos when it is in full swing, i.e., with hardboard and other by-products manufacturing added to its basic sawmilling operations. (32)

A very ingenious job training program has been inaugurated at the new sawmill. It involves both formal and on-the-job training aspects. The first two weeks of the training period are devoted to an orientation to tribal organization, safety rules, and so forth. The last three or five weeks, depending on the trainee's prior familiarity with sawmill work, are devoted to actual factory training. Advanced training will be made available for those who show special aptitude. The program is being financed under provisions of the Area Redevelopment Act and is being administered jointly by the Tribe and the Arizona and New Mexico Employment Services.

### Marketing

About 90 per cent of the old mill's production was marketed in the Midwest. It was transported by truck to the railhead at Gamorco from which it was shipped by rail. If the new mill's production warrants it, the Santa Fe Railroad may find it feasible to extend a spur line to Navajo. (See Figure 4.) With competition as keen as it is between lumber producers, the Tribe will be wise to divert some of the lumber output into processed items. These items would logically be ones that will be needed in the reservation's impending housing and resort developments. For instance, prefabricated homes and resort cabins would surely find a ready market on the reservation. It is also recommended that the Tribe set up a chain of lumber yards to distribute building materials to its members on a cooperative basis.

### Mining

The minerals which are presently being exploited in the Navajo Country are oil and gas, uranium and vanadium, coal, and sand and gravel. Mining is almost entirely a private enterprise activity on the reservation. The mining, oil, and natural gas companies have made a great contribution to the welfare of the Navajos in terms not only of personal and tribal income but also in terms of the roads and other facilities which they have built. Since mining is already being developed quite rapidly and capably, the emphasis of

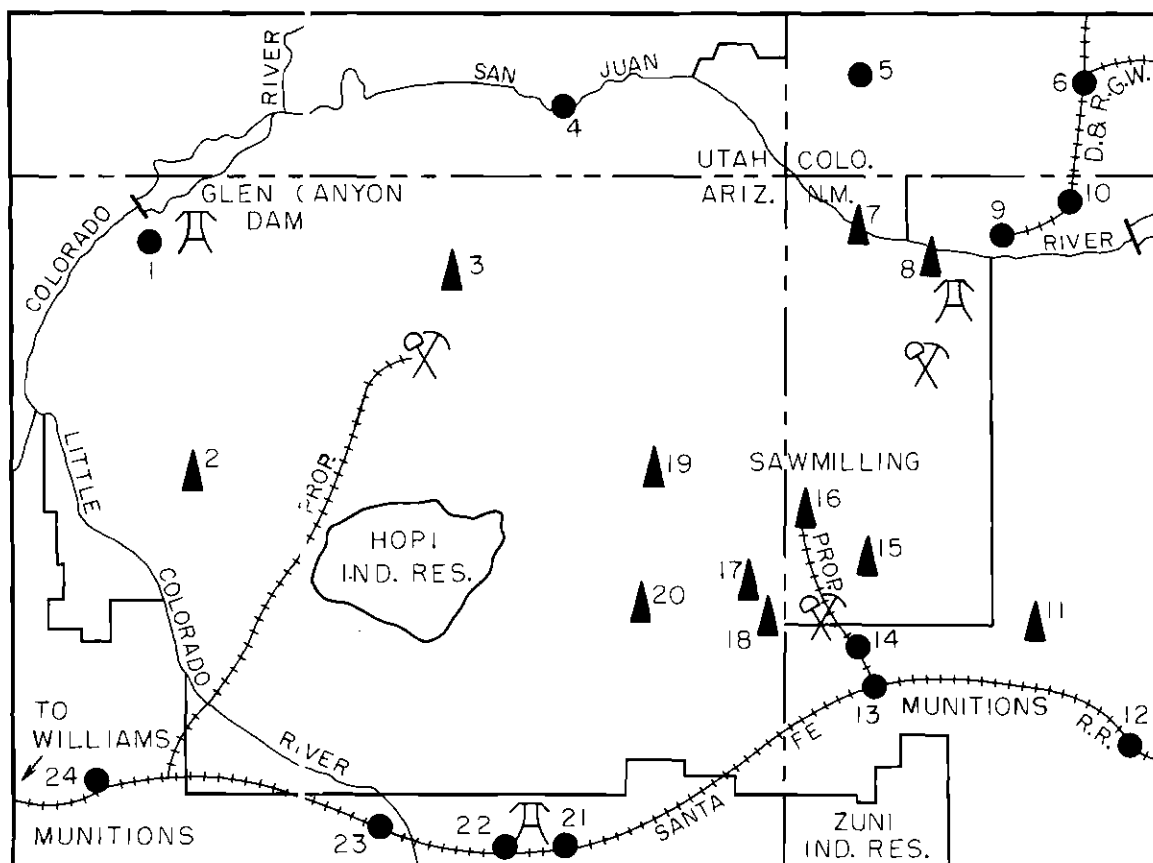


Figure 4

## Industrial Development



electric power generating plants



Navajo towns



new coal mine developments



Bordertowns

## Key Towns

- |                |                   |
|----------------|-------------------|
| 1. Page        | 13. Gallup        |
| 2. Tuba City   | 14. Gamerco       |
| 3. Kayenta     | 15. Tohatchi      |
| 4. Mexican Hat | 16. Navajo        |
| 5. Cortez      | 17. Fort Defiance |
| 6. Durango     | 18. Window Rock   |
| 7. Shiprock    | 19. Chinle        |
| 8. Fruitland   | 20. Ganado        |
| 9. Farmington  | 21. Holbrook      |
| 10. Aztec      | 22. Joseph City   |
| 11. Crownpoint | 23. Winslow       |
| 12. Grants     | 24. Flagstaff     |

this subsection will be on the importance of the activity as an employer and source of tribal income.

### Mineral Leasing

It would be fruitless to describe here the procedure whereby tribal and allotted lands are leased for mineral exploitation purposes. Suffice it to say that a prospecting permit must be obtained first if uranium, coal, or some other solid mineral is involved. If oil or gas is involved, the interested company must bid on the tracts it wants when these tracts are offered for competitive bids. Mineral leases on tribal or allotted lands run for ten years or as long as the property produces in paying quantities.

Mineral Leasing is a cooperative endeavor involving the BIA (as trustee of tribal and allotted lands) and the Tribe or (in the case of allotted lands) certain of its members. The Tribe's Advisory Committee must approve all leases involving tribal lands, but its authority is not conclusive. The BIA's Branch of Realty can block proposed leases. This duality of leasing authority causes a great deal of friction between the BIA and the Tribe.

It is recommended that the BIA relinquish its residual authority to review leases. The Tribe has proven by the judicious way it has looked after its mineral resources that it is ready to become self-governing with regard to the leasing of its own lands. Over the last decade the Tribe has assumed increasing responsibility, both financially and

administratively, for the conduct of business related to mineral resources. It has established three departments (Land Investigation, Mining, and Oil and Gas Departments) to deal with mineral and other leasing problems. It also pays about two-thirds of the cost of maintaining the BIA's Branch of Realty. Hence, the only real obstacle to the Tribe's full assumption of all resource administration duties is the bugaboo of trusteeship. This problem will be treated further in Chapter V.

The foregoing recommendation should not be construed to affect the relationship between owners of allotted properties and the BIA Branch of Realty. Because the Branch of Realty is obliged to administer the probaton of allotments, and the banking of income derived from them, it is not likely that the Tribe can or should do what needs to be done. Allotted properties should remain under BIA administration until the owners receive unrestricted titles.

Oil and Gas. Three small oil fields have been producing in limited quantities since the 1920's. However, the discovery of the Aneth field in southeastern Utah in 1956 set off a major oil and gas boom which has not yet reached its crest. Recent discoveries in the area south of Farmington have brought even greater development and prosperity to the Four Corners Area. (See Figure 3 for a rough indication of the boundaries of the oil-producing area.)

There were in 1960 almost 1½ million acres of tribal

land under lease to various oil and natural gas companies for oil and gas development. Income from lease bonuses, royalties, and rentals averages about a million dollars a month. The total value of lease bonuses, royalties, and annual rentals for the period 1935-1960 was \$109,903,277.

(33) All of this money went into the Tribe's account in the U. S. Treasury from whence it can be withdrawn only by direction of the Tribal Council. None of these funds were distributed on a per capita basis, but they were used to hasten the economic and community development of the reservation. Indeed, even if per capita distribution had been attempted during the 1950's it would have netted each Navajo only \$1,238. (34)

In addition to the leased tribal lands, many thousands of acres of allotted off-reservation lands have been leased to oil and natural gas companies for oil and gas exploitation purposes. Income from these transactions goes to the individual allottees or to their heirs. During the 1950's, \$7,403,461 was paid to individual Navajos in this way. (35)

Two 16-inch oil pipelines and four gas pipelines traverse the Navajo Country. The West Coast is the destination of all but one of these lines; that one, an oil pipeline, terminates at Jal in far southeastern New Mexico. About 150 Navajos worked in full-time maintenance capacities for the natural gas companies in 1960--and a smaller number

worked in the oil fields. Helium is also produced in the Shiprock area. The U. S. Bureau of Mines maintains a plant there, but the demand for helium is inadequate to keep the plant operating at full capacity.

The future of the oil and gas industry in the Navajo Country looks bright indeed. The estimated longevity of the Aneth and related fields is 30-40 years, but new methods of recovery may extend their productivity much longer. The 1½ million acres of reservation lands which were under lease in 1960 can probably be matched with an equal or greater number of acres under lease within the next decade. Tribal income from oil and gas will continue to serve as its ticket to greater financial and political independence. As increasing numbers of Navajos acquire the necessary education and skills, they will be able to hold down many of the oil field jobs which are now held by Anglos. Markets for oil and gas are by no means saturated and, with pipelines, they can be conveniently served.

Uranium and Vanadium. Uranium and vanadium are mined in three sections of the reservation--as shown in Figure 3. As mentioned in Chapter I, uranium is concentrated at mills near Shiprock, New Mexico; Mexican Hat, Utah; and Tuba City, Arizona. These mills are now important pillars of the reservation economy. The Tribe and the owners of trust allotments have received about \$6,650,000 from uranium and vanadium exploitation during the period 1950-1960 inclusive.

At the end of 1960 about 500 Navajos worked in uranium mining and milling. (36)

The future of the uranium industry is not bright. The government has already stock-piled so much uranium that it would take a global war or a major break-through in the peace-time use of this mineral to cause an acceleration of production. In fact, the Navajos will be fortunate indeed if none of the mills which are now operating on the reservation close when their present contracts with the government expire.

Coal. The Navajo Country is endowed with tremendous quantities of bituminous coal. Coal has been mined for use in BIA power plants and buildings for many years. The Tribe itself operates a coal mine near Window Rock. However, exploitation by outsiders has just begun in earnest. The Pittsburgh-Midway mine near Window Rock is a case in point. Coal from this mine is being shipped by rail to the Arizona Public Service Company's new 115,000-kilowatt thermo-electric plant between Joseph City and Holbrook, Arizona. (See Figure 4.) Near Fruitland, New Mexico, on the reservation, the same company is building a 350,000-kilowatt thermo-electric plant which will utilize coal which will be strip-mined in the immediate vicinity of the plant. The coal mining lease here is held by the Utah Construction and Mining Company. By the end of 1960, less than \$50,000 had been realized by the Tribe from the mining of coal; no allotted lands were



involved. No figures are available on the number of Navajos now employed in coal mining, but there are probably not more than 100.

The exploitation of coal holds great promise. With growing use of coal in thermo-electric power generation, markets are bound to grow. It has been estimated that within a few years the Tribe may be collecting \$1 million per year from coal alone. Southern California will undoubtedly become the prime market for Navajo coal. In fact, plans are underway to build a 130-mile spur line from the Santa Fe mainline, at a point about 15 miles east of Flagstaff, to a mine on the northern slopes of Black Mesa. (See Figure 4.) The Peabody Coal Company is behind this plan. The development may be large enough to require a new town. Coal mining will surely offer job opportunities to hundreds of Navajos. (37)

Another potential use of coal would be to process it into gas or liquid hydrocarbon components of motor fuels, char, tar, and chemicals. A plant capable of doing these things is planned for San Juan County, New Mexico, by the El Paso Natural Gas Company.

Miscellaneous Minerals and Materials. The Tribe and, to a lesser extent, owners of trust allotments realized \$132,438 from sand and gravel mining from 1950-1960 inclusive. (38) Employment was negligible. Geological surveys have been performed by the University of Arizona College of

Mines (for the Arizona and Utah portions of the reservation) and by the New Mexico School of Mines (for New Mexico's portion) to determine what minerals there are on the reservation. These surveys, which were very painstaking, revealed that all sorts of miscellaneous industrial and construction materials (such as limestone, gypsum, and flagstone) exist in commercially exploitable quantities. (39) Nevertheless, in most cases, the distance to markets prevents their exploitation. It has been suggested that a few tribesmen could make a living by quarrying facing stone that could be used in public buildings on the reservation. There is no evidence, as yet, that the reservation's copper and manganese deposits are abundant and rich enough to be commercially exploitable. It is impossible to forecast the probable job picture for miscellaneous industrial and construction materials.

### Summary

Although extractive and primary processing activities have constituted the backbone of the Navajo economy in years past, it is very unlikely that employment and personal income stemming from these activities will keep pace with employment and personal income in manufacturing, trade, and tourism--which will be discussed in the following chapter.

With optimum development, it is possible that 1,500 families could make a satisfactory living from grazing alone

(1,300 on the reservation proper and about 200 more in the "Checkerboard Area"). Some 3,800 families could make a good living from farming or farm service activities; about 600 families could be supported by the forestry enterprise; and perhaps 1,500 families could make a good living from mining and related activities. This makes a total of 7,400 families that could derive a livelihood solely from extractive and primary processing activities by 1970. They can do this only if the Navajo Irrigation Project and the expected coal mining developments are well on the way toward optimum development by 1970. However, figuring five persons per family and 110,000 Navajos, there will be at least 22,000 Navajo families by then. It can be seen that extractive and primary processing activities can support only about one-third of the total number of Navajo families.

## CHAPTER III

### MANUFACTURING, TRADE, AND TOURISM

The Navajo Tribe has drafted and submitted to the Area Redevelopment Administration an Over-All Economic Development Plan which gives considerable attention to the development of manufacturing, trade, and tourism activities on the reservation. Indeed, it is reasonable to suppose that these three activities together will become, by 1970, the foremost employer of Navajos. It is impossible to substantiate this prediction by projections from existing patterns of development because there has been very little such development to date. Consequently, the bases for optimism regarding manufacturing, trade, and tourism will be set forth in this chapter.

#### Manufacturing

Due mainly to the underdeveloped nature of local and regional markets, very little manufacturing is being done on or near the reservation at present. In order to launch an industrial development program for the benefit of the Navajos, it will be necessary to assess the competitive position which a reservation or bordertown location would have in relation to larger population centers.

Obviously, the reservation area cannot compete with

larger population centers in the production of goods which are normally delivered to a large market on a daily basis. Neither can it compete in the production of goods which require a number of subcontractors for the manufacture of component parts. However, the reservation and its region are, together, beginning to comprise a fairly significant market. It is this local and regional market which must be depended upon to justify and support the bulk of new manufacturing development in the reservation area. The assets of the area will now be detailed.

### Sites

The availability of good industrial sites in a variety of locations is a definite asset of the Navajo Country. Even the relative isolation of some locations could become an asset if the nation were ever obliged to disperse its vital defense plants. Two categories of locations for manufacturing plants merit discussion: (1) bordertown and (2) reservation.

Bordertown Industrial Locations. Bordertown locations appear to hold more promise for future industrialization than reservation locations. This is mainly because the bordertowns have a head start in transportation and community facilities. In fact, Navajos are now engaged in manufacturing operations near two of the bordertowns. In 1960 a total of 120 Navajos were employed at the Fort Wingate Ordnance Depot (near Gallup) and the Navajo Ordnance Depot

(near Flagstaff). (40) Another 25 Navajos work at the Babyline Furniture plant at Gamerco (also near Gallup).

The bordertowns which are most important to the Navajos from the standpoint of industrialization are Gallup and Farmington, New Mexico, and Flagstaff and Winslow, Arizona. Of lesser importance are Aztec and Grants, New Mexico, and Holbrook and Williams, Arizona. (See Figure 4.) Good sites are available in all of these towns. For instance, in Flagstaff, there is a 200-acre planned industrial park with all utilities installed. Local industrial development corporations are, in most cases, able to finance the building of industrial structures.

In the bordertowns, transportation facilities and fuel resources abound. All of the bordertowns listed above are on the mainline of the Santa Fe Railroad except Farmington and Aztec; these towns are served by a narrow gauge line which extends down from Durango, Colorado. Motor freight service is available to all of these bordertowns and air freight service is available to the four major ones. Electricity, natural gas, and coal are obtainable at reasonable prices. Water is abundant only at Farmington and Aztec. However, the other towns have barely tapped their underground water resources.

Reservation Industrial Locations. The most promising reservation industrial locations are at Shiprock and the Black Creek Valley. Tuba City and Tohatchi also have some

potential. Reservation industrial sites must be leased from the Tribe. Leases of tribal land may run for as long as 99 years.

The Shiprock area is undoubtedly the best location for heavy industrial development on the reservation. When the lake behind Navajo Dam fills, there will be an assured supply of water--part of which can be used for municipal and industrial uses. The Shiprock area has tremendous reserves of oil and gas, coal, and limestone--the makings of an important chemical manufacturing complex. With completion in 1963 of the big Four Corners Power Plant at nearby Fruitland, an adequate supply of low-cost electric power will be available. Shiprock is about 30 miles from a rail-head--at Farmington--and is at the junction of two U. S. highways. The Shiprock labor market is probably the largest on the reservation.

The Black Creek Valley, extending from St. Michaels to Navajo and including Fort Defiance, also possesses many of the prerequisites to industrialization. It is fairly well endowed with water and has extensive nearby coal deposits. There is adequate natural gas. Low-cost electric power will soon be available from the Four Corners Power Plant. A spur line from the Santa Fe mainline comes within a few miles of the lower end of the valley to serve a new coal mine. Access by highway is good from the east and west, but poor from the north and south. The labor market is

comparable to Shiprock's.

Tuba City is somewhat less favorably situated for industrialization than either of the areas just described. Water is much scarcer. Electric power will probably be more costly. Natural gas is not available. However, coal is plentiful, the labor force is adequate, and the area is much closer to California markets than either Shiprock or the Black Creek Valley.

Tohatchi is favorably situated for industrial growth-- 22 miles from the railhead at Gamerco and 25 miles from Gallup and Interstate Highway 40. The same utilities and resources are available here as at Fort Defiance, but the labor force is smaller. Tohatchi might well be developed as a planned industrial community.

#### Labor Force

Another asset of considerable value is the reservation's large, high-aptitude labor force. It is true that the sizeable Navajo labor force is largely unskilled. However, aptitude tests reveal that Indians are generally more adept at certain industrial and clerical operations than non-Indians. The foregoing generalization is based on comparisons between the scores of Indian and non-Indian high school seniors on the U. S. Department of Labor's General Aptitude Test Battery (GATB). The finding was that:

On the basis of these GATB results a tentative conclusion may be drawn that Indian workers have a greater aptitude for spatial perception, form



perception, manual dexterity, and motor coordination than does the general work force of the United States. (41)

Jobs which utilize skills related to and dependent on the above-listed talents include: machinist, sheet metal worker, carpenter, mason, office machine service man, machine operators, plumber, electronic unit and radio assembler, munitions assembler, plastic products and aircraft manufacturer. In addition, female Indians were superior to their white counterparts in finger dexterity and clerical perception.

It was estimated in 1960 that there were, within the Navajo Country, about 31,000 Navajos between the ages of 18 and 60 years. The total was about equally divided between men and women. It is not known what proportion of the women would like to work on a full-time basis because no survey has ever been taken of Navajo employables. In view of the fact that only about 5,500 Navajo men have steady jobs--either wage work or self-employment--it is likely that many of the remaining 10,000 men would welcome industrial employment.

It is recommended that the Tribe sponsor a comprehensive manpower and human dependency survey. Such a survey, if properly designed and conducted, would yield information on population characteristics, income distribution, work experience, and other factors that would be of invaluable aid to all future planning. This information should be kept

up to date by the Tribe's Vital Statistics Department.

It is also recommended that priority of job development be placed on jobs for men. Navajo women often own more livestock than their husbands. This fact, coupled with the custom of living with the wife's family, sometimes places Navajo men in a rather subservient position with regard to their wives and in-laws. With steady jobs they can recoup much of their lost pride. When unemployed they often turn to drinking and other anti-social behavior. The development of jobs for women first would only make some of the men more retiring than they now are.

It is to be expected that the majority of the supervisory personnel and technicians in reservation factories will, initially, be Anglos. The welcome and treatment given these people will influence other industries considering locations on or near the reservation. However, as time goes on, Navajos should be encouraged to work up to supervisory and technical positions.

#### Industrial Development Programs

The two agencies which are most concerned with industrial development on or near the reservation are the Tribe's Enterprises Department and the BIA's Branch of Industrial Development. These agencies cooperate in locating prospective industries and in supplying them with accurate information. They also work out arrangements between the Tribe and the bordertowns regarding plant construction and vocational

training subsidies. Furthermore, the Branch of Industrial Development is in a good position to see that reservation areas get their share of Area Redevelopment Act funds and preferences. This dual responsibility for industrial development is necessary and proper. Given a little more time and adequate financial support, this partnership should produce results.

It is recommended that the Tribe concentrate on attracting or developing two types of industries: (1) industries that can be sustained largely by the pending reservation housing improvement and resort-building activity; and (2) labor-oriented industries that can profit by utilizing Navajo manual skills and the advertising value of a reservation location.

In the first category would come items like home and business furniture and equipment. Such items are usually fabricated by male workers. In the second category would come items like electronic apparatus and precision instruments, toys (e.g., gun and holster sets), sporting goods, and western wear (especially for children). These latter items could be made by both male and female workers. Toys, sporting goods, and western wear seem appropriate because children are very fond of Indians and would surely be attracted to products that were made on the Navajo Indian Reservation.

In order to attract industries, the Tribe will

probably find it advisable to build industrial structures for interested entrepreneurs. There would be a definite tax advantage to the entrepreneurs who lease industrial buildings from the Tribe. Improvements put in by non-Indians on Indian lands are taxable by the States and counties; improvements put in by the Tribe are not. These buildings could be built to specifications by the Tribe's Design and Construction Department and managed by its Utilities Authority. On the other hand, the Tribe should not, except in unusual cases, provide operating capital or management functions for industrial enterprises.

### Trade

Trade, for purposes of this thesis, is defined as the distribution of goods and the provision of commercial services to reservation residents. The changes in facilities, as well as in capital and management needs, which urbanization is causing will be emphasized.

### Traditional Versus Modern Patterns and Facilities

The distribution of goods to Navajos has traditionally been the special province of the Indian trader. In 1960 there were 138 licensed trading posts scattered about the reservation. At least 50 nonlicensed trading posts lie outside the reservation in areas occupied mainly by Navajos or in the bordertowns. The traders, nearly all of whom are Anglos, are organized as the United Indian Traders Associa-

tion. Both as individuals and as an organized group, they have done much to help the Navajos find their niche in modern society.

The traders have been the principal agents through whom Navajo products have been marketed to the "outside world." They have also been the principal purveyor of goods from the "outside world" to the Navajos. The traders have acted as bankers to the Navajos in response to the special credit needs of a pastoral economy. Many of the nonborder-town traders act as postmasters to the areas tributary to their stores. Other services performed by the traders include employment counselling and the transporting of sick Navajos to hospitals.

Before wage work and motor vehicles became commonplace, the traders had a virtual monopoly on trade with the Indians. Since World War II, however, the availability of cash income and the purchase by the Navajos of pickup trucks have changed their shopping habits to a marked degree. Many of them now drive to their favorite bordertown (Gallup, Farmington, Blanding, Page, Flagstaff, Winslow, or Holbrook) at least once a week. (See Figure 1.) The big supermarts in these bordertowns do a sizeable share of their business with Indians. To meet this competition, a few reservation stores have been converted to self-service operations. New businesses tend to be more specialized than the old trading posts. Evidences of this trend toward modernization and

specialization are the new self-service food stores in Tuba City and Fort Defiance, the new service stations and garages on the reservation, and the two banks which are now in operation--at Shiprock and Window Rock.

This competition between traditional and modern merchandising methods, and between reservation and bordertown establishments, has some significant implications. In the first place, it is likely that the paternalistic and marketing roles of the trader will fade out in all but the smaller, more isolated communities. This expected decline in the importance of general store activities will adversely affect those individuals who operate or work in trading posts. However, this loss of employment can be more than compensated for by the development of modern shopping facilities on the reservation. Many more jobs will be available to Navajos if such facilities are developed on the reservation than if the bordertown shopping habit is encouraged by a lack of convenient shopping centers on the reservation. Some thought has been given to this problem by the planning consultants who drew up development plans for the larger towns wherein they reserved a sizeable block of land in each town for a planned shopping center.

It is recommended that private investors be encouraged to build integrated shopping centers in the larger reservation towns. The Shiprock and Window Rock-Fort Defiance urban areas can support such facilities now. Tuba

City, Chinle, and Kayenta will be able to support them in a few years if tourist travel brings them the anticipated economic growth.

### Financing Reservation Businesses

Because of the fact that tribal land cannot be mortgaged in such a way as to make foreclosure possible, private lending institutions are often reluctant to loan money to individual Navajos to start or operate businesses on the reservation. For this reason, the Revolving Loan Fund has been used by Navajo businessmen as a source of capital. The fund was augmented in 1961 by a special \$1 million tribal appropriation to establish a "private enterprise development fund." This money is available to co-operatives as well as to individuals for legitimate improvements and operating expenses. In the granting of these loans, demonstrated managerial ability is given more weight than the borrower's collateral.

Lease terms are another aspect of the financing of reservation businesses. Applications for the leasing of business sites are processed by the Tribal Trading Department, although final approval must be granted by the Advisory Committee. Leases may run for as long as 99 years; they ordinarily call for an annual rent based on the appraised value of the land and upon the firm's gross profits. Because of a lack of uniformity in present leasing practices, the Tribe is considering the adoption of a "uniform leasing

and land use code." This code would, among other things, let prospective lessees know precisely what is expected from them.

### Management Needs:

There are only about 50 Navajo businessmen at present. Few others are familiar with the principles of business management. Moreover, the Navajo value system discriminates against persons who save or invest their wealth instead of sharing it with their relatives. Individual initiative is, for the most part, frowned upon. If this attitude is not modified, the Navajos will have to stand by and watch outsiders capitalize on the business opportunities that could have been theirs.

As a means of meeting this problem, it is recommended that chambers of commerce be organized in each of the larger towns. These chambers would serve to instill in their members a spirit of progressiveness and would give them the moral support they need to withstand the traditional society's bias against individualism. They could also sponsor business management conferences or extension courses to aid the members and their employees in understanding the principles of courtesy and salesmanship.

### Tourism

Tourism is hard to separate from trade for purposes of analysis because many tourist developments are businesses.



However, the emphasis of this subsection is on activities which serve mostly nonresidents of the reservation.

### The Attractions of the Navajo Country

The Navajo Country has four of the prime ingredients for tourist appeal: scenery, climate, Indian ruins, and live Indians. The scenery of Navajoland has been made famous by Arizona Highways Magazine. The climate is at its best during the summers when children are out of school. Therefore, it should be expected that families with children will make up a sizeable proportion of all tourists who come to the reservation. Children are inveterate Indian buffs. By catering to their interest in aboriginal culture, it should be possible to detain them and their parents in the area for several days. It is claimed that an average tourist can be counted on to spend \$10 per day, so the longer tourists can be detained on the reservation the better.

The Navajo Country's principal tourist attractions fall within eight main categories: (1) dams and lakes; (2) national monuments; (3) national parks; (4) tribal parks; (5) other historical sites; (6) other geological sights; (7) modern economic and community developments; and (8) tribal fairs. (See Figure 5 for the locations of the attractions which will be discussed.)

The principal dam and lake development in the Navajo Country is, of course, Glen Canyon Dam and Lake Powell. Of lesser importance are Navajo Dam and its lake and about two

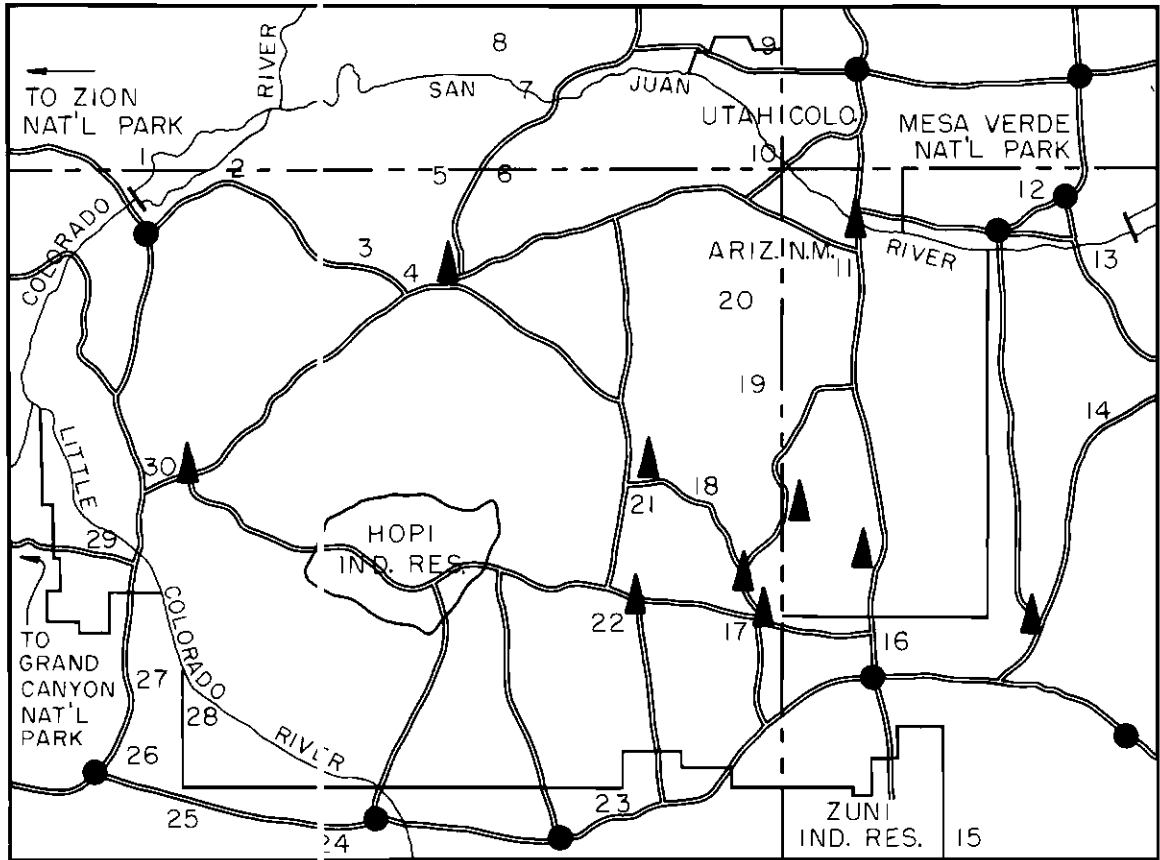


Figure 5

## Main Tourist Routes and Magnets

N. M. = National monument

T. P. = proposed tribal park

- |                                  |  |
|----------------------------------|--|
| 1. Glen Canyon Dam & Lake Powell | 17. Window Rock (Tribal Museum & Fair) |
| 2. Rainbow Bridge N. M.          | 18. Canyon de Chelly N. M.             |
| 3. Navajo N. M.                  | 19. Roof Butte T. P.                   |
| 4. Tsegi Canyon T. P.            | 20. Cove Scenic Area T. P.             |
| 5. Hoskinnini Mesa T. P.         | 21. Three Turkeys Ruin T. P.           |
| 6. Monument Valley Tribal Park   | 22. Old Hubbel Trading Post            |
| 7. Goosenecks of the San Juan R. | 23. Petrified Forest N. M.             |
| 8. Natural Bridges N. M.         | 24. Meteor Crater                      |
| 9. Hovenweep N. M.               | 25. Walnut Canyon N. M.                |
| 10. Four Corners T. P.           | 26. Sunset Crater N. M.                |
| 11. Shiprock (formation & Fair)  | 27. Wupatki N. M.                      |
| 12. Aztec Ruins N. M.            | 28. Grand Falls T. P.                  |
| 13. Navajo Dam & reservoir       | 29. Little Colorado R. Gorge T. P.     |
| 14. Chaco Canyon N. M.           | 30. Dinosaur Tracks T. P.              |
| 15. El Morro N. M.               |  |
| 16. Kit Carson Cave T. P.        |  |

dozen smaller reservoirs which are stocked with fish.

National monuments which are located completely within the reservation boundaries are Canyon de Chelley, Navajo, and Rainbow Bridge. Others located on the fringes of the reservation include Petrified Forest, Sunset Crater, El Morro (inscriptions on rock), and the following Indian ruins: Chaco Canyon, Walnut Canyon, Wupatki, Hovenweep, and Aztec Ruins.

The national parks which affect tourist traffic through the reservation are Grand Canyon, Zion, and Mesa Verde. The new paved highway between Cortez, Colorado, and Cameron, Arizona, will greatly accentuate this park-to-park traffic. Tourist-serving facilities will surely focus heavily on this route.

The Tribal Parks Commission has developed Monument Valley as its first tribal park. It is investigating the potential development of the following areas as additional tribal parks: the Little Colorado River Gorge, the Grand Falls of the Little Colorado River, the Dinosaur Tracks, Tsegi Canyon, Hoskinnini Mesa, the Four Corners Monument, the Cove Scenic Area, Roof Butte, Kit Carson Cave, and various Indian ruins not presently included in national monuments.

Other historical sites include the old Hubbel Trading Post and Museum at Ganado and the Hopi and Zuni villages. The Hubbel Trading Post may be designated as a national

historical site if legislation recently presented to Congress is enacted.

Other geological sights include the Goosenecks of the San Juan River, the Painted Deserts, Shiprock and other natural formations, and Meteor Crater.

Modern economic and community developments which tourists might wish to visit include the new tribal sawmill and town of Navajo, the tribal headquarters at Window Rock, the uranium mills, and the various oil field installations.

In addition to numerous rodeos and ceremonial dances, two major events are held annually on the Navajo Reservation. They are the Navajo Tribal Fair (held in Window Rock) and the Northern Navajo Fair (held in Shiprock)--both in the early fall.

Because of the reservation's inadequate road system, some tourist attractions receive thousands of visitors per year while others receive hundreds. The lack of roads is the biggest problem which confronts the development of tourism. Another problem relating to the reservation roads must be mentioned. Many reservation roadsides are literally strewn with beer cans and other trash. This does not make a good impression on tourists. Corrective measures should be taken periodically.

#### Tourist Services and Facilities

Proper tourist services and facilities are very necessary if tourism is to flourish. The Tribal Parks

Commission, which is in charge of tourism development on the reservation, has taken the initiative with regard to the development of basic tourist attractions. It has, for instance, built a lovely visitor center at its first tribal park, Monument Valley. It has built hundreds of picnic tables, shelters, fireplaces and restrooms at scattered locations on the reservation.

The Parks Commission is co-operating with the BIA's Branch of Land Operations on various reservoir enlargements and is stocking reservation lakes and ponds with sports fish. The Parks Commission is also slated to develop recreational facilities around the 1,200-acre lake which the Arizona Public Service Company has built for the purpose of providing cooling water for use in its new Fruitland Power Plant.

With respect to commercial tourist services and facilities, the Tribe, through its Enterprises Department, has made a significant contribution. It has built, and it continues to operate, motels and restaurants (one each) in Shiprock and Window Rock. In addition to these installations, there are about 18 privately-owned motels and the same number of cafes on or immediately adjacent to the reservation. There are at present no commercial recreational facilities such as golf courses, amusement parks, bowling alleys, or theatres on the reservation.

The biggest opportunity for the Tribe to create jobs in the tourist industry for its members will come with the

formation of Lake Powell behind Glen Canyon Dam. It is estimated that by 1966 the annual tourist traffic to Lake Powell will be 50 million tourist days. Furthermore:

The Tribe can expect to get from 10 to 20 per cent of these tourists on their [sic] 23% of the shoreline, which will be on reservation land. It is vitally important that the Tribe start planning now for the development of the necessary tourist facilities to take full advantage of this bonanza. . . . There will be opportunities for motels, cabin site leasing and construction, restaurants, grocery stores, service stations, boat rentals, boat tours, fishing and tour guides, equipment and tackle shops, firewood and construction lumber for cabins, passenger and freight transportation on the lake, gift shops, garages, and many other tourist related endeavors. (42)

The shoreline within the reservation will be 370 miles long and will include some of the best and most developable sites anywhere along the lake's 1,800 miles of shoreline. The tribal side of the lake also has the advantage of being closer to the town of Page--the undisputed hub of the area. Five sites have already been selected by the Tribe, in cooperation with the National Park Service, for development. It is expected that the development of the Tribe's Lake Powell shoreline will be administered by the Tribe's Resources Division according to a comprehensive master plan.

It is recommended that, as a general rule, the Tribe build campgrounds, picnic areas, exhibit shelters, visitor centers, lakes, golf courses, and amusement parks (i.e., tourist magnets) rather than motels and other high-cost

tourist accommodations. By providing something for people to see or do when they come to a specific locale, the Tribe will have laid a foundation which will support numerous tourist-serving businesses. For instance, an amusement park at a strategic location like Chinle or Kayenta would provide opportunities for active recreation (swimming, miniature golf, rides, and so forth) to give tourists a change of pace from sight-seeing. The Tribe should also furnish attractive signs announcing the reservation's attractions. Relative to the Tribe's role in building facilities, the chairman of the Tribal Parks Commission says:

We need motels throughout the Reservation, but I am opposed to the investment of Navajo capital and to the Tribal operation of such enterprises. I am convinced that nationally-known, reliable and competent operators of tourist resorts are interested in making investments in tourist facilities in Chinle, Crownpoint, Kayenta, Tuba City, and the Four Corners. We need only to offer these people some security for their investments. Hundreds of jobs for Navajos will be created in the construction of such facilities and the operation of motels and other facilities will naturally result in increased Navajo employment. (43)

However, where outside investors are reluctant to build needed facilities, or where it is desirable that Navajos operate the businesses, the Tribe would be justified in building facilities and leasing them to tribesmen with management ability. This technique might be especially applicable to the smaller businesses like cafes and tackle shops. This could be done by the Tribal Enterprises Department. It could build and then lease facilities instead of

operating them. The lessee would, over a period of years, pay back the Tribe's investment with interest. After that was done, the lease rent might be lowered. The Tribal Enterprises Department would operate in the same manner as an industrial development corporation.

An excellent facility for keeping tourists in a given area for longer than they might ordinarily stay is the guest ranch. The guest ranches which are envisioned for the Navajo Country need not be elaborate, like those of Southern Arizona, but they should be comfortable. A fair-sized swimming pool and good horses are essential. These guest ranches should be geared to the family vacation market. A central booking agency could be set up to assign families to the various ranches. Families should be encouraged to stay a week or more--during which time they could ride to nearby canyons and Indian ruins, and attend rodeos, cook-outs, squaw dances, and square dances. Trips could be taken to nearby lakes for fishing and water-skiing and to nearby towns for golfing, swimming, bowling, and the movies.

#### Arts and Crafts

The principal arts and crafts of the Navajo people are the making of wool rugs and silver and gem-stone jewelry. In a sense, the production of these arts and crafts is a manufacturing operation, however primitive. On the other hand, their marketing is an adjunct of trading post opera-



tions and a service to passing tourists. However they are viewed, they cannot be considered a major source of livelihood for Navajos. Arts and crafts contributed only about \$348,300 or 9 per cent of the total estimated Navajo income in 1940. In 1958, they contributed about \$500,000 or 1.4 per cent of the total earned income and 1.0 per cent of the total Navajo income. (44)

### Rugs

The world famous Navajo wool rug is woven in almost all sections of the reservation. There are about a dozen principal styles of Navajo rugs--named after the areas in which they are most commonly made. The weaver usually cleans, cards, spins, and dyes the wool which goes into a rug. This, of course, takes time which could be more profitably spent in the actual weaving process. It is recommended that a central wool preparation facility be established. It is recognized that such a facility has been attempted before. It was unsuccessful because of distribution and management problems. However, improved roads are now available. If it is managed by the Tribal Arts and Crafts Guild, a central wool preparation facility should prove economically feasible.

The traders market the majority of the rugs which are produced. However, many of the finer quality rugs are marketed by the Tribal Arts and Crafts Guild and by exclusive specialty shops in resort centers like Scottsdale and Tucson, Arizona; Albuquerque and Santa Fe, New Mexico; and Palm

Springs, California. Very little has been done about marketing Navajo rugs in the Eastern United States.

It is recommended that the Institute of American Indian Arts at Santa Fe develop illustrative materials showing how Navajo rugs, paintings, and other home furnishings would fit into a variety of interior decoration schemes. Articles and advertisements in home furnishings magazines could show how adaptable Navajo rugs and other Indian crafts are to various types of rooms. This publicity should stimulate the manufacture of custom Navajo furniture, lamps, and other accessories which could, in turn, pay for more advertising.

Furthermore, the Institute should train Navajos as interior decorators. Navajos have a feel for beauty and a flair for the decorative arts which might well be channeled this way. In time, these Navajo interior decorators might be in as great demand to design lovely rooms as Japanese landscape gardeners are to design their inimitable rock gardens.

### Jewelry

The making of silver and gem-stone jewelry is not as widespread, in terms either of geography or employment, as the weaving of rugs. In fact, there is a significant clustering of Navajo silversmiths around Smith Lake, New Mexico. Others work in Gallup and other bordertowns for curio stores. The production of Navajo jewelry is highly individualized and is not adaptable to mass production techniques.

Competition from cheap imitations has hurt the Navajo silversmiths. The finer items are in a class by themselves and are therefore not subject to imitation. However, the less expensive items are widely copied and mass produced by unscrupulous non-Indians. New Mexico and Arizona have laws which require the labeling of imitation Indian jewelry. These laws protect buyers only insofar as they wish to obtain genuine handicrafts. The problem is to make people dissatisfied with cheap imitations. It is recommended, therefore, that the United Indian Traders' Association sponsor a nation-wide campaign to explain how and why to buy genuine Indian handicrafts. This association should also promote Indian jewelry as a fitting kind of costume jewelry for a variety of occasions.

## CHAPTER IV

### PUBLIC SERVICES AND FACILITIES

The governments and agencies which provide public services and facilities to the Navajos are: (1) the Navajo Tribe; (2) the BIA and USPHS; and (3) the States and counties. In addition, there are some privately-owned public utilities (such as the Santa Fe Railroad and the Arizona Public Service Company) whose operations affect the reservation. The role of these governments, agencies, and public utilities as employers of Navajos and as builders of public works will be treated, first, in a general way. Then the individual services will be treated according to whether they are provided reservation-wide or only to urban areas. Finally, the problem of housing the Navajos will be explored.

#### Current and Prospective Employment

The latest year for which statistics on employment and income from government service, government-sponsored construction projects (such as Glen Canyon Dam), and privately-owned public utilities are available is 1960. These figures are interesting because they show how important these activities are to the Navajo economy.

Table 3. Employment and Income for Navajos from Public Services and Facilities in 1960

Source	Number of Employees	Total Annual Earnings	Average Earnings per Employee
1. Payroll-BIA	1,725	\$ 7,590,000	\$4,400
2. Wages & Unemployment Compensation-Railroad	1,400	3,227,000	2,305
3. Payroll-Navajo Tribe	903	2,815,000	3,117
4. Payroll-USPHS	382	1,607,842	4,209
5. Payroll-Public Schools	173	389,270	2,250
6. Payroll-Glen Canyon Dam	70	260,000	3,714
Totals	4,653	\$16,781,612	\$3,606*

\*Two factors which are not readily apparent from the table above tend to deflate this figure. One is that the figures for the public schools include 28 part-time employees who made less than \$1,000 each in 1960. The other is that a strike on the Glen Canyon Project prevented a half-year's work there. (45)

Not included in the table above are the 4,900 Navajos who earned a total of \$892,500 from part time tribal jobs, such as membership on grazing committees and land boards, and the indeterminate number of Navajos who received about \$4,786,000 in wages for work on tribal public works projects, including shallow well and spring development. (46)

Two laws enacted by Congress in 1934 are effecting the relative importance of the different governments as employment sources. The Johnson-O'Malley Act authorized the transfer of certain administrative responsibilities from the Federal Government to the States and their instrumentalities.

In most cases, however, the States receive, from the BIA, the funds which are needed to provide the different services. A parallel trend, resulting from the passage of the Indian Reorganization Act, involves the transfer of certain responsibilities from the BIA to the tribal governments. In keeping with these two trends, it is likely that BIA employment will decrease while tribal and, to a lesser degree, state employment will increase.

Employment of Navajos by the USPHS will increase as they are trained in pertinent professions and skills.

Employment of Navajos on government-sponsored construction projects will surely continue at a high level. The construction of the Navajo Irrigation Project and the rapid urbanization of the reservation will provide continuity of employment for Navajo construction workers.

Primarily as a result of automation, railroad employment has declined from a high of about 7,000 during World War II to about 1,500 during 1960. Navajo railroaders will be fortunate if they can maintain this level of employment.

### Public Works

The agencies primarily responsible for the building of public works on the reservation are the BIA and the Tribe. The States and counties have built very few public works in the Navajo Country. Even the public schools which the counties have built have been financed by the Federal

Government under Public Law 815--the "impacted areas" legislation.

Among the public works built by the BIA have been lakes and irrigation projects, sawmills, power plants, roads and trails, hospitals, and schools. This was done mostly with annual BIA appropriations until 1950. In that year, Congress passed the Navajo-Hopi Rehabilitation Act. This act appropriated \$88,570,000 for the long range economic and community development of the two reservations. A \$20 million supplement was added to the road-building phase of the long-range program in 1958. Subsequent BIA and (since 1955) USFHS budgetary funds have permitted additional construction.

The Tribe, for its part, has built the new \$8½ million sawmill and its accompanying townsite, ground water development facilities, tribal housing and office buildings, police stations and jails, chapter houses and civic centers, tourist facilities, airport runways, and utility facilities. This has all come about since 1955 owing to the Tribe's expanded lease income from minerals.

#### Reservation-Wide Services

Many services are supplied to the entire Navajo Reservation without much variation between rural and urban areas. The general-type services which will here be treated are: (1) water development and distribution; (2) electric

power; (3) roads and streets; (4) employment services and vocational training; (5) health; (6) credit; (7) law and order; and (8) leisure time services (i.e., recreation, libraries, and adult education).

#### Water Development and Distribution

The BIA, the USPHS, and the Tribe all play a part in water development and distribution activities within the Navajo Country. The BIA's Branch of Land Operations is responsible for surface water impounding. The Tribe is responsible for ground water development, including deep wells, shallow wells, and springs. The BIA supplies potable water to Fort Defiance, Shiprock, Crownpoint, Chinle, Ganado, Kavena, and some smaller towns while the Tribal Utilities Authority supplies it to Window Rock, Navajo, Tohatchi, and Tuba City.

Since there is practically no industry on the reservation, the principal nonagricultural users of water are, at present, residences, businesses, and institutions. The Tribe, with technical advice and materials from the USPHS, is endeavoring to place what is called an "Individual Home Water Storage Unit" in each house and hogan in the more isolated areas. The water for these units will come from wells and springs which the Tribe is improving. The USPHS is also providing technical advice and materials for the laying of water lines to as many as possible of the houses and hogans in the vicinity of each sizeable community. It



does this under authority of Public Law 86-121 which directs the USPHS to build sanitary facilities in reservation communities.

It is recommended that the Tribal Utilities Authority take over the BIA's municipal water systems. This would place all such systems under a single management and would make it possible for rates and billing to be uniform. It would also be advantageous to prospective residential, business, and industrial developments to have the Tribe distributing all water. The Tribe could move much faster than the BIA to extend utilities to these new developments because it is not dependent on Congressional appropriations for funds with which to make capital improvements.

#### Electric Power

Electric power is distributed by the BIA to Fort Defiance, Tohatchi, Crownpoint, Kayenta, Tuba City, and several smaller communities. This power comes from three different sources: (1) the BIA's own coal-burning power plants; (2) the Arizona Public Service Company (on the western side of the reservation); and (3) an REA co-operative with headquarters in Grants, New Mexico (on the eastern side of the reservation).

The Tribal Utilities Authority distributes electric power to Shiprock, Chinle, Ganado, Navajo, Window Rock, and a few smaller settlements. This power comes from: (1) the City of Farmington (for Shiprock) and (2) the Arizona Public

Service Company (for the other four towns).

With completion in 1963 of the big new Four Corners power plant at Fruitland, New Mexico, the Tribe will have access to a sizeable block of power. In fact, the Tribe has an option to buy 12½ per cent of the output of this plant at wholesale. The plant's initial capacity will be 350,000 kilowatts. Plans are to double this capacity within the next decade.

There is a power shortage on the western side of the reservation which could become serious enough to hinder industrial and housing development in that area. The obvious solution to this problem would be for the Tribe to procure a block of the power which will be produced at the nearby Glen Canyon Dam. Political action appears to be the only way to achieve this objective.

It is recommended that all of the BIA's power generation and distribution facilities be brought into the Tribe's utilities system. This will give the Tribe more leeway to set rates that will be attractive to industry. Moreover, it will give the Utilities Authority a firmer and more lucrative source of current revenues than a predominantly rural system would yield.

#### Roads and Streets

Through highways, rural feeder roads and trails, and city streets are now planned, financed, and built by the BIA's Branch of Roads. The BIA has an agreement with the

State Highway Departments of Arizona and New Mexico that these states will maintain certain through routes on the reservation. All other maintenance work is done by the BIA on a subagency basis.

The Tribe, for its part, installs paved streets, curbs, gutters, sidewalks, and street lights and signs in its new subdivisions. There is presently no effective program for supplying the above-named facilities to established neighborhoods. Through its public works program the Tribe has built some bridges in rural areas. It also manages most of the reservation airports.

The BIA's Branch of Roads has designated 1967 as the target date by which it hopes to complete an adequate reservation road system. However, Congress must increase its appropriations if this schedule is to be met. Bills are now before Congress authorizing the construction of approximately 709 more miles of paved highways on the reservation. Many of the proposed routes are critical north-south connecting links. One of them is an especially important connector between Page and Kayenta which will enable west-bound travelers to go from Gallup to Lake Powell by a fairly direct route. (See Figure 5.)

Upon completion of the basic road system, the following division of responsibilities is recommended: (1) the States should assume responsibility for maintaining all through routes; (2) the BIA should concentrate on building

additional connecting links; and (3) the Tribe should build and maintain all rural feeder roads and trails, city streets, and airports.

In order to carry out its new functions, the Tribe should set up a Tribal Roads and Streets Department. It would then be able to improve access roads leading to its chapter houses and tribal parks without having to wait on the BIA. Of course, a goodly proportion of its capital funds would still need to come from the Federal Government. The Tribe should also set up a program whereby paved streets, curbs, gutters, sidewalks, and street lights and signs can be provided (perhaps on a special assessment basis) to established neighborhoods.

#### Employment Services and Vocational Training

Employment services and vocational training programs are administered in behalf of the Navajos by the BIA, the Tribe, and the States. The BIA and the States are concerned mostly with off-reservation arrangements; the Tribe with on-reservation arrangements.

BIA Programs. The BIA administers three programs which prepare Navajos for better jobs: (1) the Relocation Program which was discussed in Chapter I; (2) the Adult Vocational Training Program; and (3) certain programs conducted at the BIA's off-reservation boarding schools.

The Adult Vocational Training Program involves both training and subsistence grants to Indians between the ages

of 18 and 35 who wish to study vocational subjects in approved State and private trade schools. This program has been very successful, and it is recommended that Congress appropriate sufficient funds to permit more Indians to benefit from this excellent program.

The BIA operates a number of off-reservation boarding schools which offer programs in vocational training. For instance, the Haskell Institute in Lawrence, Kansas, and the new Institute of American Indian Arts in Santa Fe, New Mexico, offer two years of post-high-school training in useful skills. Since 1948 several other off-reservation boarding schools have been utilized in conducting the "Special Navajo Program." This program was designed for Navajos who are several years retarded in their schooling through lack of proper facilities. Now that proper facilities are being made available on or near the reservation, it is likely that the boarding schools which have specialized in the accelerated program will soon be wanting for enrollees. It is therefore recommended that some of these boarding schools be converted into vocational schools offering post-high-school training for youths and, in certain cases, adults. The Sherman Institute in Riverside, California, might logically be converted first because it is located in a large city where part-time employment should be available.

Tribal Programs. The Tribe offers three main employment and vocational training programs: (1) the Tribal Higher

Education Scholarship Program; (2) the Tribal Farm Training Program which was described in Chapter II; and (3) an on-the-job training program.

The Tribal Higher Education Scholarship Program is supported by the interest from a \$10 million trust fund which is kept in the U. S. Treasury. During the 1959-60 school year, about 360 young people were assisted by means of tribal scholarships to attend colleges and specialized vocational schools.

The Tribe's on-the-job training program, which is handled by its Personnel and Employment Department, has two aspects. One involves the training of tribal employees, e.g., the apprenticeship program conducted by the Design and Construction Department. The other operates through firms doing business on or near the reservation. By signing preferential hiring contracts with the Tribe, and by giving vocational training to Navajos, these firms receive on-the-job training subsidies from the Tribe.

State Programs. The States provide a full range of employment services to their Indian citizens through their employment offices. They are especially helpful with regard to seasonal employment opportunities and aptitude testing. They are also helping the Tribe administer an Area Redevelopment Act retraining program at the new sawmill (see Chapter II).

It is recommended that the States, perhaps with

financial participation from the BIA, establish industrial education centers in certain key bordertowns. The ideal locations for the centers would be Farmington, Gallup, and Winslow. These communities are sizeable enough to justify such investment by the States. Bordertown locations are preferable to reservation locations for such centers because here Navajos could learn useful trades in a cosmopolitan environment.

### Health

Public health and medical services are now provided by the USPHS with assistance from a few small mission hospitals. Although the USPHS makes an effort to inspect reservation cafes, food stores, motels, and trailer courts in connection with its other environmental health duties, it is not able to enforce its directives as effectively as would be desirable. The Tribe has two public health duties which supplement USPHS programs: (1) vital statistics recording and (2) animal (i.e., coyote and rodent) control. The former is performed by special clerks at each subagency town while the latter is carried on from Window Rock.

It is recommended that the Tribe set up field offices at each subagency town to handle the animal control function. This function should also be broadened to include dog and insect control. It is also recommended that the Tribe hire a public health officer to inspect reservation cafes, food stores, motels, trailer courts, and swimming pools. This

officer should be vested with authority based on adequate tribal health codes.

### Credit

Although credit is normally a private enterprise function, on the Navajo Reservation it is mostly a public service. There are, it is true, two banks on the reservation. However, the credit which they and bordertown banks extend is mostly of the short term variety. Hence, the Revolving Loan Fund (mentioned repeatedly in this thesis) fills a definite need for capital to improve tribal and allotted trust properties. The Fund is administered in part by the Tribe, i.e., the Tribal Council's Loan Committee approves loans. On the other hand, the BIA's Branch of Credit performs all collection and associated duties. This arrangement is necessary because the Tribe cannot sue or be sued and is, therefore, unable to collect debts. It is recommended that the Tribe be given the power to sue and be sued and that the entire credit operation be turned over to an appropriate tribal department. Most likely, a new department will need to be set up within the Administrative Division to handle the credit program.

### Law and Order

Two distinct law enforcement agencies now operate on the reservation--the Tribal Police and the BIA special officers.

The Tribal Police patrol the whole reservation as



well as the "Checkerboard Area." Its headquarters are in Fort Defiance. District headquarters with jails and ambulances are maintained at each of the other four subagency towns. Substations are maintained in other sizeable settlements. Whenever local town governments are set up on the reservation they will probably supplement the Tribal Police with locally-appointed town marshals.

The BIA's law enforcement functions are exercised through the Navajo Agency Special Officer who investigates the "ll major crimes." Trials of these crimes are held in Federal courts. This arrangement will be necessary as long as the States cannot exercise law and order prerogatives on the reservation. Moreover, it is recommended that the States not be given law enforcement powers on the reservation until the tribesmen become considerably more familiar with Anglo customs than they now are.

#### Leisure Time Services

Leisure time services include recreation, libraries, and adult education. Recreation is now the responsibility of BIA-sponsored recreation committees in the larger towns and Navajo chapters in the rural areas. The State of New Mexico provides bookmobile service to its portion of the reservation; and some of the chapters are developing lending libraries. Adult education is now primarily the responsibility of the BIA--which operates adult education units at 17 locations on the reservation. The chapters sponsor a

few adult education forums.

It is recommended that the chapters expand their leisure time services. Every chapter, whether located in a town or in the country, should have a lending library. The chapters in the larger towns should have swimming pools to complement their gymnasiums. Financing of leisure time services could be obtained partly from a sales tax on sporting goods and other luxuries sold in reservation stores. This tax should be collected by the Tribe and apportioned among the various chapters.

A special frontal attack must be made on the problem of adult illiteracy. One way this could be done would be for the Tribe to organize "folk schools" at every chapter. The "folk school" is a night school for working-class people who desire to further their education in an informal atmosphere.

While the prototype folk schools of Sweden were designed more to enrich one's understanding than to fight illiteracy, the folk schools recommended for the Navajo Country could achieve both aims. The rudiments of the English language should be emphasized throughout. When these rudiments have been mastered, the curriculum could be broadened to include classes in practical economics, arithmetic, hobby crafts, personal hygiene, and local and national history and government.

Each of these folk schools should be organized with

an unpaid board working through a paid part-time director. Funds for educational materials and for the director's salary should be furnished by the Tribe. Instructors could be local persons, BIA adult educators, or even Navajo college students.

The use of Navajo college students during the summers has considerable merit since the Tribe already has a program under which it places such students in gainful employment with various tribal departments and BIA branches during the summers. The problem has been that there were not enough jobs to go around. Some of these returning students have been assigned, along with BIA teachers, to the summer recreation program. As part of the folk school program they could be assigned to a "summer literacy program." They could help with local public works, range improvement, and housing improvement projects during part of the day and teach the local people the use of English in the evenings.

### Urban Services

Urban services are those which are supplied predominantly to urban areas. In fact, they are essential to the general welfare and efficiency of such areas. The urban services which will be treated are: (1) sanitary sewerage; (2) natural gas distribution; (3) telephone service; (4) fire protection; (5) refuse collection and disposal; (6) public transportation; and (7) community development and planning.

### Sanitary Sewerage

As in the case of municipal water services, the BIA, the USPHS, and the Tribe are involved in sanitary sewerage operations. The BIA operates the sewer systems in Fort Defiance, Shiprock, Crownpoint, Chinle, Ganado, Kayenta, and some smaller towns. The Tribal Utilities Authority operates the systems in Window Rock, Navajo, Tohatchi, and Tuba City. The USPHS extends technical advice and materials to both agencies. It is expected that about 80 communities will be sewered to the extent feasible within the next few years. The oxidation pond is the standard method of sewage treatment.

It is recommended that the Tribal Utilities Authority take over all sewerage systems on the reservation. This will help to relieve the BIA of a costly housekeeping duty and will permit unified management by the Tribe. It is also well for water and sewer services to be administered by the same agency because the former is revenue-producing while the latter is not.

### Natural Gas Distribution

Natural gas is purchased at wholesale from the El Paso Natural Gas Company and distributed by the Tribal Utilities Authority to customers in Shiprock, Window Rock, Fort Defiance, and Navajo. The Tribe has been guaranteed a sufficient quantity of gas to serve those towns which are situated close to the pipeline.

### Telephone Service

Telephone service is now supplied by the BIA's Branch of Communications. Present service is quite bad in spite of recent capital improvements. It is recommended, therefore, that the BIA investigate the possibility of selling its entire Gallup Area telephone system to a private telephone company with adequate resources and nationwide affiliations.

### Fire Protection

There are now 18 volunteer fire departments on the reservation. They have been organized under the auspices of the BIA wherever the BIA has extensive installations. The Tribe is in charge of fire protection in Window Rock and Navajo. This is a service which ought to be provided by local governmental units--whenever they are set up on the reservation.

### Refuse Collection and Disposal

There is no public garbage service on the reservation at present, although the BIA handles this task for its own towns. It is recommended that this important local public service be administered by the local governmental units whose creation will be discussed in Chapter V.

### Public Transportation

The Santa Fe Railroad is the most important form of public transportation now serving the reservation. Its future importance will probably rest mainly on its role in

the industrial development of the bordertowns. Freight rates will have a great deal to do with the feasibility of conducting certain manufacturing operations in the border-towns.

Two small buslines operate on the reservation. One runs from Tuba City to Flagstaff--the other from Window Rock to Gallup. A busline between Tuba City and Window Rock and shuttle bus service between reservation communities and bordertowns where Navajos work may soon be in demand. It is recommended that the Tribe operate these bus lines because it may be that the criterion of need will outweigh that of profit.

There are, at present, no common carrier motor freight lines operating on the reservation. Such service will become increasingly mandatory as businesses and industries develop on the reservation. It is therefore recommended that the Tribe encourage some of its members who have the requisite management ability to organize motor freight service. Private lending institutions should be willing to provide the necessary capital.

#### Community Development and Planning

The discussion of community development and planning will be broken down into three main aspects: (1) advance planning; (2) urban design; and (3) development controls.

Advance Planning. Advance planning is a method of applying intelligent forethought to the solution of problems.

There is a great deal of planning being done within both the Tribal and BIA organizations. However, this wealth of planning is not always coordinated properly. Plans must always be framed in terms of consistent policies and fiscal realities. Much lost motion can be avoided if someone is authorized to reconcile the plans made by various tribal departments and BIA branches.

The logical person to coordinate advance planning on the reservation would be a planning director hired by the Tribe. This person should be a generalist with a superb knowledge of Indian law and customs, economics, and regional planning. He should be especially helpful as an advisor to tribal leaders on land use and population problems, capital improvements budgeting, and the formulation of codes relating to development. The planning director could function most effectively if he were located directly within the Executive Secretary's office. The planning director would not need a large staff because most of his drafting, statistical, and other routine work would logically be done by existing departments or branches.

Urban Design. The Tribe has called on private planning consultants for help in determining the directions of growth its towns should take. Development plans have been drawn up by the consultants and approved by the local chapters for Window Rock-St. Michaels, Fort Defiance, Tuba City, and Shiprock. A development plan for the new town of Navajo

has also been formulated by the consultants and adopted by the Tribe. Subdivisions have been planned for Window Rock-St. Michaels, Fort Defiance, Tuba City, Shiprock, and Tohatchi. Development plans and subdivision layouts will be needed for Chinle, Crownpoint, Ganado, and Kayenta in the near future.

Development Controls. Because the Tribe owns the bulk of the land on the reservation, and because land use is now controlled by a system of leasing, most of the ordinary development controls are not applicable to the reservation. The objectives of zoning ordinances, building codes, subdivision regulations, and official maps can be achieved without resort to the police power. Judicious leasing of tracts coupled with restrictive lease terms can effectively control, and even encourage, good land use. The only type of development which must be administered under the police power is that of sign erection. The Advisory Committee has established a permit system to control this activity.

Under the present leasing procedure the Advisory Committee approves all leases on an essentially ad hoc basis. Except in the case of mineral leases, few if any standards have been adopted by the Advisory Committee to guide it in its handling of different categories of leases. As the development of the reservation proceeds, the Advisory Committee will surely find it impractical to consider each lease proposal as if it were a unique case. The Tribe



recognizes this problem and is moving toward the adoption of a "uniform leasing and land use code." This code would specify that all reservation lands of a given classification be subject to certain uniform development standards. This classification of land is already in process by the Tribe's Design and Construction Department.

In essence, the "uniform leasing and land use code" would serve as the master key to the various types of leases which might normally be executed. Since it would apply to all towns on the reservation it would have to be quite flexible. Modifications of building line setbacks, side yard and buffer requirements, building height and lot coverage limitations, off-street parking and loading requirements, and so forth should be allowed in cases where a strict interpretation of the code would cause unnecessary hardship.

The Uniform Leasing and Land Use Code should require in every lease adherence to the appropriate regional building code. The Tribe will have to follow through with a system for inspecting private construction if it expects to make sure that all private construction abides by the building code. This inspection function would logically come under the direction of the Tribe's Design and Construction Department.

The administration of the Uniform Leasing and Land Use Code will require a unique administrative mechanism. The Tribe's Land Investigation, Design and Construction,

Trading, and Community Development Departments, and its Resources Division, presently help the Advisory Committee formulate land use decisions. They do this by processing different kinds of applications or by making special studies. It is recommended that the present distribution of the application processing and special studies workload be continued. However, there should be a development control board set up to consider problems and proposals not anticipated by the Uniform Leasing and Land Use Code. This quasi-judicial board could resolve most of the technicalities inherent in an unusual lease proposal before the Advisory Committee considered it. In addition to helping formulate the Uniform Leasing and Land Use Code and amendments thereto, the board should be empowered to grant minor modifications to the standard lease terms and to reclassify areas.

The proposed development control board should be composed of the heads of the Tribal Land Investigation, Design and Construction, Trading, and Community Development Departments, with a representative from the Resources Division. The Tribe's Planning Director should serve as the board's secretary and technical advisor.

### Housing

The problem of providing adequate housing for reservation residents is beset with cultural and financial difficulties which are substantially unique to the reserva-

tion. These cultural and financial problems will be discussed in some detail along with existing housing improvement programs. Two housing improvement programs designed mainly to benefit low income families will also be presented.

### Cultural Considerations

The most significant Navajo cultural trait which has a bearing on housing is a desire for privacy and living space. Of course, most people want more privacy than they can afford; but the Navajos have always had plenty of privacy. Some of them will be loathe to sacrifice it for the conveniences of urban living. Others are already reconciled to the economic realities which dictate moderate-sized lots where urban-type services are supplied. Therefore, it is recommended that wherever it is necessary to make a choice between larger lots and, say, lighter pavement or no sidewalks that larger lots be provided. Surface improvements can always be up-graded later; lot sizes cannot.

A one-half acre lot would seem to be the best compromise between what the Navajos have said (in various opinion surveys) they want and what is realistic in terms of improvements. With lots of this size it should be permissible for the lot owner to build either a duplex or two detached units on his lot. In this way the lot owner could accommodate his parents or other dependent relatives in separate quarters where he could look after them. However, the development control board should reserve the right to say where

the second house (or addition to the first one) may be located on the lot and what building standards must be met.

Another cultural factor with economic overtones which has an effect on housing patterns is the seminomadism of so many Navajos. Herders, for instance, must move with their flocks between their summer and winter ranges. They cannot afford two standard homes. Railroaders, construction workers, and miners also require a measure of residential mobility. Indications are that some of the 1,500 or so families who now derive a satisfactory living from herding and other migratory occupations will turn to small mobile homes to meet their housing needs. It is therefore recommended that accommodations for mobile homes be developed in both urban and rural areas on the reservation. Permanent, well-appointed mobile home parks should be developed in each of the larger towns; and smaller, less elaborate parks should be developed in rural areas wherever they are needed.

#### Existing Housing Programs

Two existing housing programs are essentially satisfactory in their present forms. These are: (1) private tract housing and (2) industrial housing.

Private Tract Housing. Housing for many of the 4,000 or so Navajo families who have steady incomes averaging about \$4,000 yearly is now in the process of being provided in tribal subdivisions. For many years the peculiarities

of land status on the reservation prevented even those families who could otherwise have qualified for FHA financing from taking advantage of it. An agreement has recently been signed between the FHA and the BIA which enables reservation Indians to qualify for FHA financing. The details of this agreement are somewhat obscure, e.g., it does not say precisely what will happen if someone defaults. However, it is assumed that the BIA will stand back of the Indian home-buyers. The agreement has made possible the Window Rock-St. Michaels and Fort Defiance subdivisions (now under construction). These will, reportedly, be the first FHA-insured housing developments on any Indian reservation in the country.

Improvements in the tribal subdivisions will include paved streets, curbs, gutters, sidewalks, street lights and signs, fire hydrants, water and sewer lines, and power and gas lines. It is estimated that the Tribe's contribution toward streets and utilities will amount to between \$1,500 and \$1,800 per lot. Through a novel arrangement, the Tribe's contribution toward site preparation will be considered the home-buyer's downpayment. (47) In all cases, excepting the new town of Navajo, house building in tribal subdivisions will be done by private builders.

Industrial Housing. New industrial housing will be primarily at the new coal mine developments. For instance, the proposed coal mine development on the north side of Black

Mesa will surely be large enough to require a worker village. Other isolated extractive installations might also need worker housing.

Worker housing would, of course, be built by the developing industry; but it should be sold to its occupants as soon as possible. This will minimize the development of a "mill town" atmosphere. The procedure which the Tribe expects to use at the new town of Navajo should serve as a guide to privately-owned industries. It will be necessary for each industry to set up a program whereby its employees can finance the purchase of a home. This will be possible if the housing built measures up to FHA standards.

#### Proposed Housing Programs

For those families who cannot afford mobile or tract homes, and who are not eligible for industrial housing, the following programs are suggested: (1) public housing and (2) self-help housing.

Public Housing. It is now possible for Indian tribes having police powers (which includes the Navajo) to set up housing authorities and apply for loans with which to build low-rent public housing. In view of the Navajos' preference for privacy, it is likely that single-family and duplex units would, initially, find the most ready acceptance on the reservation. Later, a few garden-type apartment structures could be built as pilot projects. The most likely users of low-rent public housing would be welfare recipients

and young couples who are just setting up housekeeping.

The nursing home is another type of public housing which might have some limited application to Navajo housing needs. The Fort Defiance development plan shows that a site has been reserved in that town for a nursing home. However, in view of the Navajo belief that a house becomes "chindi" (haunted) when someone dies in it, Navajo elders may not want to live in a home where numbers of persons were likely to die. It might be well for the Navajos to note how the nursing home which has recently been built on the Pine Ridge Reservation of South Dakota is received. The Public Housing Administration participated liberally in the building of that home. (48)

Self-Help Housing. For those families, mostly rural, who cannot afford any other type of housing, a self-help program would appear to be the only solution. Housing has traditionally been a minor item in the budgets of these rural families. Traditional Navajo housing was built by the intended occupants with help from relatives and friends. The only out-of-pocket expense was ordinarily for the food which these helpers ate while working on the hogan. It is recommended that the self-help program be built around this traditional practice of cooperation as well as the Navajos' natural flair for carpentry and masonry.

In order to make sure that this self-help housing is not of the shack variety, the Tribe will need to provide

better materials and skilled supervision to the home builders than that to which they would normally have access.

The Tribe is in an excellent position to produce all of the wood products which will be needed. Modular panels could easily be produced at the new sawmill. These panels could be combined in various ways with native stone or cement blocks to build either hogan-shaped or rectangular houses. Shell homes or even finished prefabricated homes would surely meet the needs of many families. These units could also be manufactured by the Tribe at the new sawmill. Plumbing supplies, hardware, and other fittings could be purchased by the Tribe in large quantities and distributed at a minimal mark-up through the chain of lumber yards recommended in Chapter II. The Tribe should also set up a special home improvement fund in connection with the Revolving Loan Fund--just as it has a special private enterprise development fund. Long term, low interest loans will be necessary to the success of the self-help program.

The skilled supervision could be provided by a force of construction supervisors trained and paid by the Tribe's Design and Construction Department. These men would undergo a two- or three-year apprenticeship period after which they would be assigned to reservation communities where interest had been shown in housing improvement. House-building co-operatives should be organized so that reciprocal labor is recorded and repaid.



### Summary

Because of the Navajo Reservation's relatively isolated and underdeveloped nature, a system of public services and facilities has evolved which is dependent mainly on public financing and management. Even housing is a more markedly public- and industry-sponsored activity on the reservation than elsewhere. It is likely that this pattern will continue, with only minor modifications, for some time to come. However, as the average annual income level of the Navajos rises, it may become desirable to de-emphasize the centralization of so many services and so much housing under regional governments and big corporations. The tribal subdivisions are a step in the right direction. The establishment of local governmental units would be another step toward bringing about more typically American community life on the reservation.

## CHAPTER V

## ORGANIZING FOR ECONOMIC DEVELOPMENT AND URBANIZATION

There have always been those who have insisted that the best way to speed up the economic development of the Indian reservations, and the cultural assimilation of their inhabitants, would be to abolish the reservations completely. These critics of the reservation system forget that the reservations were established to protect a remnant of the Indian land base against encroachment by white men. They also fail to realize that treaty promises and poverty can be tremendous obstacles to the "normalization" of the reservation.

Despite the inertia of the status quo, the Navajos may some day choose to disband their tribal government. If this were to come about, they would have two main alternatives: (1) to become an integral part of existing counties, or (2) to form three or more new counties embracing only the present or extended reservation. The Menominee Indians of Wisconsin recently chose the latter alternative when their trusteeship status was terminated.

Under the first alternative, the Navajos would procure equal citizenship at the price of losing their collective identity. The second alternative would partake of the

faults of both the first alternative and the status quo--and the virtues of neither. It would destroy the Tribe's unity yet keep its people from participating with non-Navajos in county governments.

Instead of going to either of these disruptive extremes, it is recommended that the reservation be preserved intact and that the Tribal Government be strengthened. These goals have the support of the Navajo people and are sensible when viewed in the light of the reservation area's developmental needs.

In order to minimize friction between the various governments operating on or near the reservation, and between Navajos and off-reservation officials, it is recommended that efforts be made to harmonize Navajo laws and usages with those prevailing in the counties and states of which the reservation is a part.

The object of this chapter is to set forth various changes in governmental organization which are necessary in order that the reservation and its people may develop to their fullest potential. Changes within the Tribal Government will be treated first--then changes within the BIA organization. Finally, the shifting of duties between governments and the inter-relationships between them will be explored. Services rendered by the USPHS and by the States and counties, both present and proposed, have been discussed in previous chapters.

### Tribal Government

At present the Tribal Government operates without a formal constitution. Although the Navajo people have never formally consented to its rule, the Tribal Government has exercised the sovereign powers of the Tribe (i.e., its pre-conquest powers) to the extent permitted by the Secretary of the Interior. The Navajos were given the right to adopt a constitution by Section 6 of the Navajo-Hopi Rehabilitation Act of 1950. In the words of the act:

. . . Such constitution may provide for the exercise by the Navajo Tribe of any powers vested in the tribe by existing law, together with such additional powers as the members of the tribe may, with the approval of the Secretary of the Interior, deem proper to include therein. . . . The constitution may be amended from time to time in the same manner as herein provided for its adoption, and the Secretary of the Interior shall approve any amendment which in the opinion of the Secretary of the Interior advances the development of the Navajo people toward the fullest realization and exercise of the rights, privileges, duties and responsibilities of American citizenship. (49)

It is recommended that the Navajos adopt a constitution at the earliest possible time. The value of a constitution to the Navajo Tribe would be: (1) to formalize and legalize (according to the time-honored American pattern) the powers already held by the Tribe, and (2) to restore to the Tribe certain powers lost because of express enactments of Congress which have repeatedly extended the Federal Government's trusteeship prerogatives. In the drafting of the tribal constitution, special attention should be given both to the rights of Anglos living on the reservation and

to the rights of Navajos living off the reservation.

Some form of local town government is badly needed on the reservation. The larger the various towns grow, the less appropriate it will be to administer all public services by remote control from Window Rock. Local town governments will be needed to provide public services that will not be provided on a uniform reservation-wide basis by the Tribal Government. For instance, the towns may require traffic and nuisance ordinances. These ordinances would have to be enforced by a town marshal. Other services which could best be furnished locally are: fire protection, garbage collection and disposal, street tree planting and maintenance, and leisure time services.

Financing of these local governmental services should come almost entirely from the Tribe since the Tribe has already pre-empted almost all sources of revenue. Consequently, the Tribe should continue to collect all taxes and rentals, but it should distribute a portion of them to the towns on an equitable basis. Fortunately, there are existing local organizations, the "chapters," which can be transformed into the needed town governments. Although they have no corporate powers, the chapters operate much like New England town meetings. It is recommended that the chapters in the larger towns be chartered by the Tribe as town governments. They should be empowered to adopt ordinances and provide services within the framework of tribal laws.

A town council should, along with the chapter officers (mentioned below), serve as the governing body of the town. These persons should be nominated and elected in a convention at which all residents of the town, Anglos as well as Navajos, could vote. Membership on the town council should be open to Anglos. This would give them a voice in the government of the towns in which they live and work.

The present trio of chapter officers (president, vice-president, and secretary) is adaptable to the needs of this new political entity. The chapter president and vice-president would correspond to a mayor and vice-mayor, respectively, while the secretary would correspond to a town clerk. In deference to the Indians' prior rights to live on the reservation, these officers should all be Navajos.

#### BIA Reorganization

The central problem which seems to plague the BIA in its administration of Navajo affairs is the existence of both a Navajo Agency and the Gallup Area Office. There is at present a great deal of duplication between the work of Navajo Agency and Area Office specialists. There is also a problem of red tape and delays where matters of business must clear two different administrative levels. Another circumstance which makes the present set up unwieldy is the fact that the Navajos are taking over many duties from the BIA which the other tribes that come under the jurisdiction

of the Gallup Area Office will not be able to take over for some time. With more and more functions being shifted from the BIA to either the Tribe or the States, it would be logical to place the atypical Navajo Reservation under a separate area office. From 1949 to 1954 there was a Window Rock Area Office which handled only Navajo and Hopi business. Considering the size of the Navajo Reservation and the Navajo Tribe, a separate area office would seem justified again.

Under the proposed set up, the Navajo Area Office (whether in Window Rock or Gallup) would perform all centralized tasks (especially planning and budgeting) while the subagencies would assume a new importance by conducting all of the BIA's day-to-day administrative program.

#### Intergovernmental Relations

The Navajo Tribe has more opportunity to control the rate and quality of its jurisdiction's development than almost any other political body in America. Because of the foregoing circumstance, it has a tremendous responsibility to plan and administer land use and resource allocation with equity and imagination. The Tribe is prepared to do this, but it is prevented from doing so because of the nature of the Federal Government's trusteeship prerogatives. The use of tribal lands, resources, and funds is inhibited by all sorts of restrictions--many of which curtail initiative and retard development. It is, therefore, recommended that Con-

gress restore to the Tribe its sovereign power to administer freely its own factors of production. With the exception of the power to sue and be sued, the Tribe has all of the corporate powers necessary to do this. Therefore, the constitution should specify that the Tribe will have all powers necessary for the disposition of its own resources.

It is also recommended that the following property-oriented BIA responsibilities be shifted to the Tribe within the next five or six years: land and mineral leasing, range improvement and management, forest protection, urban fire protection, rural feeder roads and city streets, all utility systems except the telephone system, and the credit program.

Whereas the Tribe is ready to assume the bulk of the BIA's property administration duties, the States and counties are not ready to assume full responsibility for the bulk of the social services which the BIA now extends to the Navajos. Therefore, a complete termination of Federal services and trusteeship like that which the Menominees have experienced would be unwise if not impossible for the Navajos within the near future. Much remains to be done by the BIA to bring the Navajos up to a level of education and well-being that will permit them to compete successfully in modern American society.

It is the conclusion of this thesis that the Tribe is the most logical form of government for the Navajo Reservation for the foreseeable future. The following statement,



made in 1943 by an official of the BIA, still seems pertinent today:

I cannot predict how long tribal government will endure. I imagine it will be variable in duration. I can imagine some tribes will remain cohesive social units for a very long time; others will more or less rapidly diffuse themselves among the rest of the population. It is not our policy to force this issue. Indians have the right of self-determination. And cultural diversity is by no means inimical to national unity, as the magnificent war effort of the Indians proves. . . . (50)

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